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INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION

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A GRAPHIC SUMMARY OF GRAZING ON THE PUBLIC LANDS OF THE INTERMOUNTAIN REGION

PART II. SEASONAL USE RELATIONSHIPS OF LANDS USED IN THE PRODUCTION OF RANGE LIVESTOCK

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PROPERTY OF INTERMOUNTAIN
FOREST AND RANGE EXPERIMENT
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TABLE OF CONTENTS

	Page
Introduction	1
Sources of data and procedure	3
Method of presentation	5
General comment	5
Map showing location of national forests and grazing districts	8
Southern Idaho	
Summary of important features of seasonal grazing use in southern Idaho	9
Graphs of seasonal use of grazing lands by cattle and sheep on the national forests and grazing districts of southern Idaho	16
Nevada	
Summary of important features of seasonal grazing use in Nevada	46
Graphs of seasonal use of grazing lands by cattle and sheep on the national forests and grazing districts of Nevada	52
Utah	
Summary of important features of seasonal grazing use in Utah	70
Graphs of seasonal use of grazing lands by cattle and sheep on the national forests and grazing districts of Utah	78
Southwestern Wyoming	
Summary of important features of seasonal grazing use in southwestern Wyoming	114
Graphs of seasonal use of grazing lands by cattle and sheep on the national forests and grazing districts of southwestern Wyoming	117

June 15, 1941

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PART II. SEASONAL USE RELATIONSHIPS OF LANDS USED IN THE PRODUCTION OF RANGE LIVESTOCK

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Introduction

This is the second in a series of reports presenting a graphic summary of grazing on the public lands of the Intermountain region. Part I described the regional aspects of range resources and trends in range use. Part III will consider the present distribution of the public land grazing resources to the different sizes and types of livestock enterprises. This report, Part II, shows the seasonal use relationships of the various kinds of range land and crop land throughout the Intermountain region. This is a subject of major importance to persons interested in the management of public and private land resources.

A few general examples will serve to indicate the interdependency of the different seasonal feed resources. Throughout the Intermountain region range sheep production is characterized by large-scale movements of sheep to and from the different ranges and harvested feed supplies. In Idaho, the semidesert Snake River Plains provide spring and fall range for sheep that are summered on the higher ranges to the north and south and winter on harvested feed on the irrigated lands along the Snake River. In contrast to this, the majority of Utah sheep winter on the "east" and "west" deserts of Utah. Their spring and fall ranges are the lower elevations of the high mountains used for summer range. Most

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1/ U. S. Forest Service Region 4: Utah; Nevada, except the southwestern edge; Idaho, south of the Salmon River; and southwestern Wyoming. See figure 1.

Nevada sheep summer on the higher ranges in the northern part of the state and then move south to winter on the desert ranges of central and southern Nevada. The spring and fall range is located intermediate between the summer and winter ranges.

Generally speaking, beef cattle production in the region is based on feeding of harvested feeds during the winter season. This results in a closer land-use relationship between cattle production and the irrigated lands than is found with sheep. however, in Utah about one-third of the beef cattle obtain some of their feed from desert ranges during the winter. Only a small percent of the sheep in the region use the desert and semi-desert ranges during the summer but an appreciable amount of the summer cattle range is found on these more arid lands. In a number of instances cattle summer on range used by sheep during the winter. In sharp contrast to sheep production there is relatively little large-scale trail movement of cattle between the different seasonal feed resources. Where high summer range is not situated fairly close to the other seasonal feed supplies, as indicated above, cattle summer on the lower ranges. Another feature peculiar to cattle production is the use in some areas of meadows and irrigated pastures for summer range.

The purpose of this study is to show the broad aspects of the interrelationship of the seasonal range resources and feed crop production. This material is presented for use by administrators of public range lands, county planning committees, extension workers, and other persons engaged in land-use planning. It makes available basic data on grazing land use that may aid in the development of sound land utilization policies. The brief discussion accompanying the graphic material is not intended to be a detailed analysis but should serve merely as a guide to the reader.

Sources of data and procedure

The information presented in this report was compiled from the 1939 national forest grazing permits and 1939-40 grazing district licenses.[2/] These data show the permitted cattle and sheep months'[3/] use. Data on the national forests for 1924 to 1938 for this region indicate that the actual use is about 12 percent less than the permitted use. This is due to such causes as some livestock being removed before the end of the permitted grazing season or failure to put on all the livestock permitted. A similar difference between permitted use and actual use may hold true for the grazing districts as well.

The permit data on the national forests do not include permitted months' use by exempt or free-use livestock. However, this is only 2 percent of the animal unit months permitted on the national forests of this region. The grazing district data include licensed use of free-use livestock, but as is the case on the national forests this is a very minor part of the total licensed use.

Trailing and nonuse licenses or permits are not included in either the national forest or the grazing district data. Nonuse licenses or permits are issued to operators who have an established grazing preference but do not intend to run all the livestock permitted or licensed during the period nonuse is granted. Trailing of sheep occurs in the spring and fall seasons in the movement to and from the winter and summer ranges and is confined to designated routes. Interstate movements of livestock have been taken into consideration in working up the state graphs. For example, winter grazing in Nevada by Utah sheep is included in the Utah state graph and subtracted from the Nevada state graph.

2/ In a few cases in Idaho and Wyoming 1938-39 licenses were used in lieu of 1939-40 licenses, where the latter were not available.

3/ One cattle month and one sheep month are the feed required respectively by one cow and one sheep for one month. Animals of less than 6 months' age are not considered.

In addition to the use on the federal lands in the grazing districts, the graphs on the grazing districts include the use on private, state, and county-owned lands intermingled with and used at the same time as the federal lands. A large portion of these intermingled nonfederal lands have not been owned or leased by the livestock operators and are generally unfenced range land. In some instances where these lands have been legally controlled by the operator using the area, they are commensurate property but are not crop land or fenced range. Most of the nonfederal lands mentioned above fall in the status of tax default, state, school, railroad, oil shale withdrawal, coal withdrawal lands, and abandoned homesteads. Prior to 1940 the use of these lands within the grazing district was included in the licenses issued by the Grazing Service. They were considered as a percentage of the total grazing use of the area used by the livestock licensed to graze. Since 1940, the Grazing Service in Utah requires that these lands be legally controlled before the licensee is granted a license for their use in conjunction with the federal lands inside the grazing districts. At the present time the Grazing Service is negotiating with state, county, and private land owners for the leasing of these lands so they may be administered in conjunction with the federal lands.

The natural increase of the animals permitted on the public ranges, of less than 6 months' age, are grazed free of charge and the amount of feed consumed by these young livestock is an appreciable item on summer ranges. In addition to the use made of public ranges by domestic livestock, most of the big game animals in this region secure a major portion of their feed from the public ranges. It is estimated that there were 195,400 deer and 35,300 elk on the national forests of the Intermountain region in 1938.4/

4/ Estimates made by Division of Wildlife and Range Management of the U. S. Forest Service, Region 4, 1938.

Method of presentation

The data in this report are arranged by states, since to a certain extent the states are geographic units and have livestock mangement practices and ranch organization distinct from one another. The national forest and grazing district use has been summarized for each State. This summary appears in graphic form for both cattle and sheep and precedes the individual forest and grazing district graphs for each state.

These state graphs have a line at the top representing the number of cattle or sheep months' feed required during each month for the cattle or sheep population of the state.[5/] The difference between the top of each bar showing the months of public land use and the months' feed required is the amount of feed the privately owned ranges, pastures, and crop lands provide. For example, in figure 2 the difference between the top of the bar for the month of May and the line at the top of the graph is the months of feed that the private lands contribute to maintain the cattle population. This is approximately 65 percent of the total May feed and, since most cattle are on the range by May, will be privately owned range land. Figure 2, the Idaho cattle graph, also shows that in January practically all of the feed required for the cattle population is secured from private lands which, in this case, would be principally hay.

General comment

In studying this graphic presentation the reader will note that the seasons of use vary considerably between individual grazing districts and individual national forests. This variation is due to both natural

5/ Source: State cattle and sheep population figures taken from Agricultural Statistics for 1939 published by the U. S. Department of Agriculture and are preliminary figures for 1939. Milk cows have been deducted from the cattle numbers.

and artificial factors although in the main the season of use coincides with the natural set-up. Natural conditions creating differences in the season of use are such factors as elevation, latitude, location with respect to surrounding mountain masses, winter snow cover, availability of stock water, and precipitation.

In addition to these factors the location of the supply of the various seasonal ranges causes differences in the season of actual use of ranges. In some areas the shortage of naturally adapted spring range causes use of summer range during the spring while in other areas the lack of fall range results in the prolonged use of summer range into the fall. Where the actual use of the range does not coincide with its natural season of use a decline in the productivity of the feed resource generally occurs. This situation demands a shift in the present land use relationships.

The management of public ranges directly affects the use of private ranges and crop-producing lands which react on the economic and social organization of the adjacent communities. The season and rate of use of one seasonal feed resource directly or indirectly influences the use of another. The shortage of spring and fall range in Utah results in a heavy demand for early use of the high summer ranges. To bring about proper use of the spring and fall ranges in Idaho it may be feasible to use more harvested feed during the spring, but such an adjustment may not be possible in Utah where the supply of hay is much smaller. The increased use of farm pastures may be necessary in order to withhold grazing on depleted summer ranges until they have been restored to their full productive capacity. Information on the seasonal use of ranges and feed crops is vital to a coordinated plan of action for proper land utilization.

In order to bring about proper use of the agricultural resources of an area of which range forage is an integral part, it is necessary to coordinate the use of both private and public lands. The graphic presentation of resource use in this report suggests the necessity for public land management policies which will give proper recognition to the need for agricultural resource conservation and management of the various kinds of public and private lands. In addition to their contribution to the agricultural industry as grazing lands, the national forests have high values as watersheds for irrigated agriculture. In fact, portions of many of the national forests are more important as watersheds for irrigated agriculture than they are for grazing, which further emphasizes the close relationship between the public and private lands in agricultural production. The income secured from livestock grazed on certain watersheds is relatively small compared with the value of the irrigation water from these areas when measured in terms of income obtained from the irrigated lands.

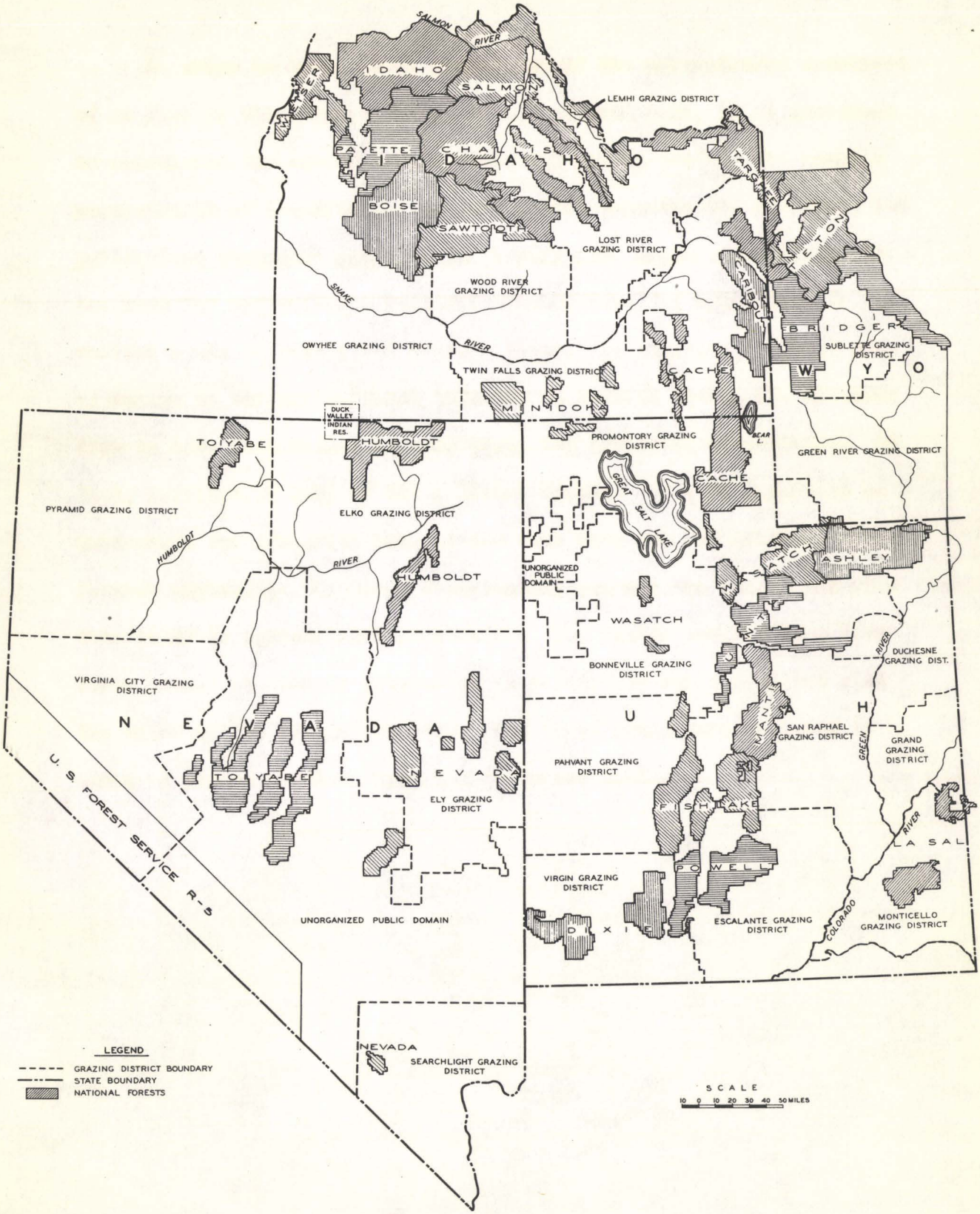

FIG. 1 NATIONAL FORESTS & GRAZING DISTRICTS IN THE INTERMOUNTAIN REGION - 1941

SOUTHERN IDAHO[6/]

Only about one-third of the beef cattle in southern Idaho are grazed on public lands during the period from April to November when range feed is available. Most of the cattle are fed hay during the winter for approximately 4 months and use principally private range and pastures during the rest of the year. No significant seasonal relationship between the use of the grazing district and national forest ranges for cattle production is indicated.

Figure 3, clearly reflects the use interrelationship of different types of land in the organization of sheep production in southern Idaho. There is not much winter grazing on the desert ranges of the grazing districts. Most of the sheep are wintered on hay on the irrigated districts of the Snake River which flows across southern Idaho. A large proportion of the sheep operations in Idaho are based on the production of early fat lambs. This is a higher cost operation than for most of the sheep production in other areas of the region and requires ample winter feed and high quality summer range. During the spring the sheep use the grazing district ranges, which are the Snake River Plains (figure 1), as they move from the irrigated feed base to the summer ranges on the national forests. Sheep make use of the grazing district range somewhat earlier in the spring than do cattle. Much of the early spring feed is from cheatgrass (Bromus tectorum) which dries up after furnishing feed from four to six weeks. The season of use is somewhat longer than this because of elevational differences which make feed available in different localities along the line of movement at somewhat different dates. It will be noted from figure 3 that an appreciable

6/ Includes only Idaho south of the Salmon River.

part of the grazing within the exterior boundaries of the grazing districts is on unfenced privately owned land. This is principally abandoned homestead land which needs reseeding or other restoration management. The management of these intermingled lands is directly connected with the administration of the public lands. Before these lands are brought into a coordinated program of management it may be necessary to make adjustments in the tax situation.

The small amount of summer sheep use on the grazing districts is by farm flocks of dry ewes from early lambing operations organized into cooperative bands. Most of the summer sheep grazing is on the national forests, where the lush summer feed makes it possible to market milk-fat lambs in July and August. In the fall the sheep make further use of the grazing districts on their way back to the irrigated lands. The fall use of the districts is not as great as spring because the amount of forage (in many localities this is principally fall growth of cheatgrass and Russian-thistle) is less and also because feed is available on the irrigated lands in the form of hay and cropland aftermath. The range livestock operations provide a market for the hay and grain produced by irrigation farmers who do not have sufficient livestock to use these feeds.

The following paragraphs briefly describe the seasonal use of the individual forests and grazing districts.

Boise National Forest

Grazing use of the Boise Forest is principally during the summer, with some May use on that part of the forest range that lies at relatively low elevations. The summer sheep use on the Boise is associated with the Owyhee Grazing District where spring and fall range is secured.

Caribou National Forest

The Caribou is the only forest in southern Idaho that does not border a grazing district. Hence its use is not as closely associated with the grazing districts. There is a considerable area of spring and fall range around the forest in private ownership that is controlled by operators having permits on the forest. This, coupled with the fact that the permitted livestock are fed during the winter, makes for a close land use tie directly between the private lands and the forests.

Challis National Forest

Figures 8 and 9, showing the cattle and sheep use on the Challis Forest, indicate a longer and earlier season of use than for some of the other forests of the state. The sheep use on this district is to an appreciable extent associated with spring and fall range on the Lost River and Lemhi Grazing Districts. In contrast to the Boise, Sawtooth, and other Idaho forests many of the sheep that summer on this and the Salmon Forest do not move to the Snake River for winter feeding but are fed on ranches adjacent to the forest.

Idaho National Forest

The seasonal use of the Idaho Forest, figures 10 and 11, reflects the differences in use of ranges lying at varying elevations. The cattle use starts in March at the lower elevations, and gradually increases to a peak in midsummer when the high range is used. Since permitted sheep use only the high range the grazing is principally during the months of July to October. There is some use association in livestock production between this forest and the Owyhee District for spring and fall range. Livestock that use the forest are fed during the winter.

Minidoka National Forest

The early spring cattle use on the forest during April and May is due to the relatively early growing season experienced by this forest area. In addition, some of the range could not be used later on in the season since there is no stock water available except from melting snow. Summer grazing on this forest is associated with spring and fall range on the Twin Falls Grazing District and spring and fall and winter range on the Promontory Grazing District. The sheep that come from the Snake River country are operated under a different type of ranch organization than are the sheep from Utah that use this forest.

Payette National Forest

Figures 14 and 15 show the season of use on the Payette Forest. The May cattle use and June use by sheep is on lower range. Most of the sheep that use the forest come from some distance away and are relatively large ownerships. Some of the sheep are bucked on the forest in October. This is also true for parts of the Boise, Challis, and Sawtooth Forests. Sheep use on this forest is associated with spring and fall use of the Owyhee Grazing District and winter feeding on the irrigated districts.

Salmon National Forest

The spring and fall and winter use on this forest is on the southern half of the forest where winter snow cover is light. Some of the cattle and sheep that graze on the Salmon Forest use the Lost River and Lemhi Grazing Districts for spring and fall range, but this is not generally as true for sheep as on the other forests. Most of the livestock that use the forest are wintered on hay produced on ranches lying along the edges of the forest.

Sawtooth National Forest

Practically all of the Sawtooth Forest is high, rugged range and the season of use does not begin until summer for both cattle and sheep. The use of this forest by sheep is closely associated with the irrigated lands of the Snake River and the Twin Falls Grazing District.[1/] The sheep are wintered on hay produced on the irrigated lands and use the grazing district as spring and fall range in the movement to and from summer range on the forest. The cattle grazed on the forest generally come from ranches located close to the forest.

Targhee National Forest

The season of use on the Targhee Forest, as shown by figures 20 and 21, is similar to that on the Sawtooth. The June use by sheep is on lower range. Many of the sheep using the Targhee for summer range use the Lost River Grazing District for spring and fall range. (See figure 1.)

Weiser National Forest

The spring and fall use by cattle and sheep on the Weiser Forest is on the low range along the Snake River. Some of the livestock that summer on the Weiser use the Owyhee Grazing District during the spring and fall months. Most of the livestock using the forest are fed hay during the winter (see figures 22 and 23).

Owyhee Grazing District

The principal period of cattle use on the Owyhee Grazing District is in the spring. During May and June the use drops rapidly. This is due to some of the cattle going onto the forest and the drying up of the

1/ What was formerly the Twin Falls Grazing District has recently been divided into the Wood River District, north of the Snake River, and the Twin Falls District, that area south of the Snake River.

ranges
feed on the lower/. The summer use by cattle on this district is principally on the higher lands. About 5,000 cattle from ranches lying just over the Idaho line in Oregon use the district.

Sheep use of Idaho No. 1 is primarily during the spring and fall. The sheep lamb early after wintering on hay on the irrigated lands and are out on the grazing districts until June. Then most of them go to the national forests for summer range. A few remain on the higher lands of the grazing district using private lands intermingled with the grazing district lands. Approximately 25,000 sheep from adjacent Oregon ranches use this district.

Twin Falls Grazing District[8/]

Cattle use on the Twin Falls Grazing District (figure 26) starts later than on the Owyhee District, and the decrease in use during the summer is similar but the decline is not as rapid. The later spring use by cattle in the Twin Falls District compared with the Owyhee indicates that the feeding season is somewhat longer than in the latter. Both the Owyhee and Twin Falls Districts graphs indicate there is little use relationship between the national forests and grazing districts for cattle production. The seasonal use by sheep of the Twin Falls District is comparable to the Owyhee except that the spring use starts later and there is less summer use of the district. The use of this grazing district by sheep is associated with grazing on the Sawtooth, Minidoka, Boise, and Challis Forests and winter feeding on the irrigated lands along the Snake River.

8/ What was formerly the Twin Falls Grazing District has recently been divided into the Wood River District, north of the Snake River, and the Twin Falls District, that area south of the Snake River.

Lost River Grazing District

Cattle use of this district (figure 28) begins in April with the principal use during the spring months. The summer use is on the higher lands adjacent to the national forests. The cattle are fed hay during the winter months. Sheep use (figure 29) is distinctly spring and fall with the sheep being fed hay during the winter except for a small number that use the district through the winter months. The somewhat later spring use by sheep on this district than on the Owyhee and Twin Falls Districts reflects the later lambing practiced in this area. Many of the sheep lamb on the range. Use of this district is associated with the national forests lying to the north, west, and east.

Lemhi Grazing District

The cattle use of the Lemhi District (figure 30) is principally spring and summer. The grazing district lands in this district are in the long valleys between the mountains in east-central Idaho and is a different type of range than in either the Owyhee or Twin Falls Districts. There is some on-and-off use by livestock between the Challis and Salmon National Forests and the grazing district. This is also true for the Lost River District. Sheep use on the Lemhi Grazing District is spring and fall grazing but the use is later in the spring and there is more late fall grazing than in the other Idaho districts. This is because of the type of range and method of operation. There is more late lambing in this district than those to the west.

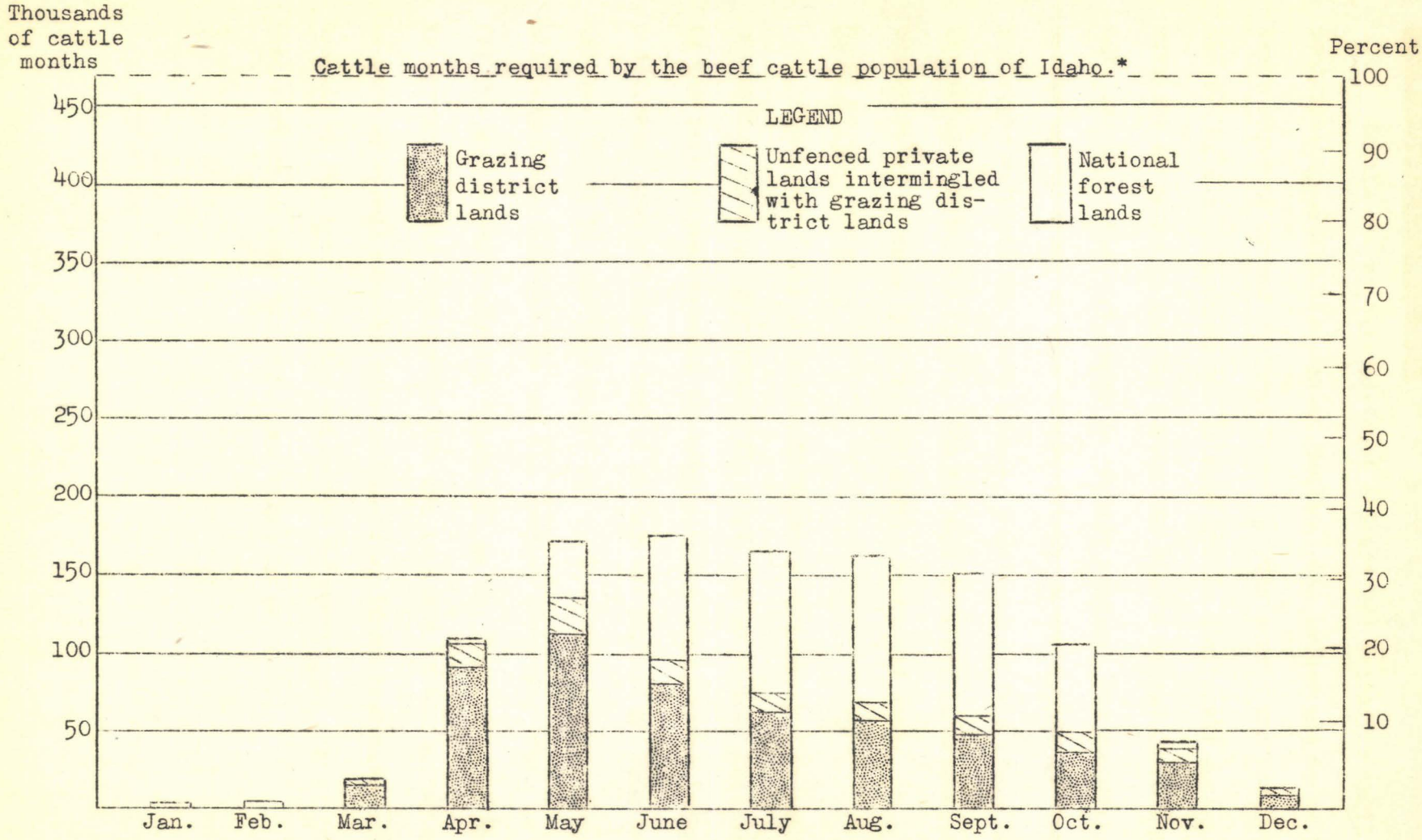

Figure 2.- Cattle months required by the beef cattle population of Idaho* and the amounts furnished by the different kinds of land during each month, 1939.

*Includes only that part of Idaho south of the Salmon River.

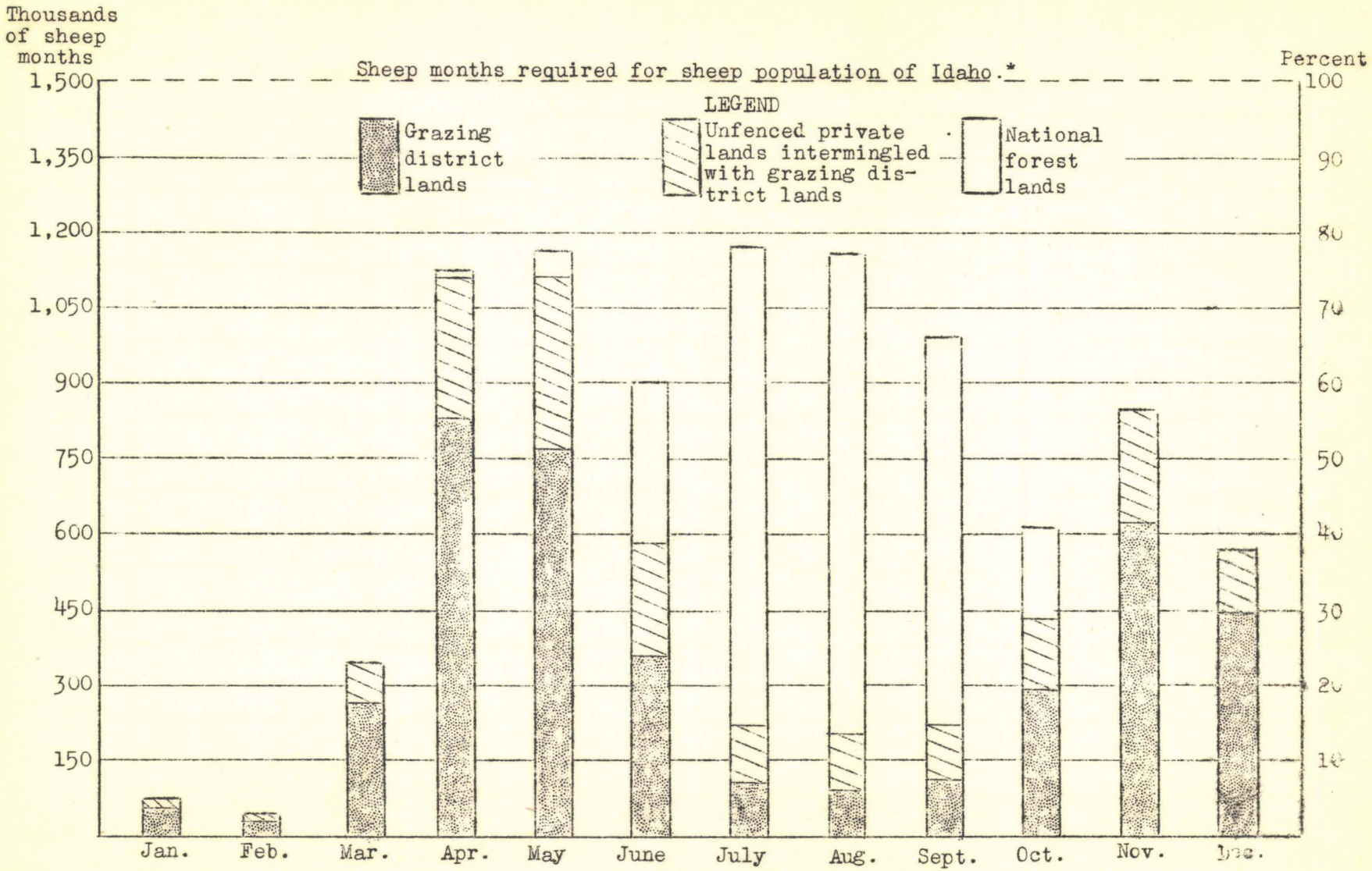

Figure 3.- Sheep months required by sheep population of Idaho* and the amounts furnished by the different kinds of land during each month, 1939.

*Includes only that part of Idaho south of the Salmon River.

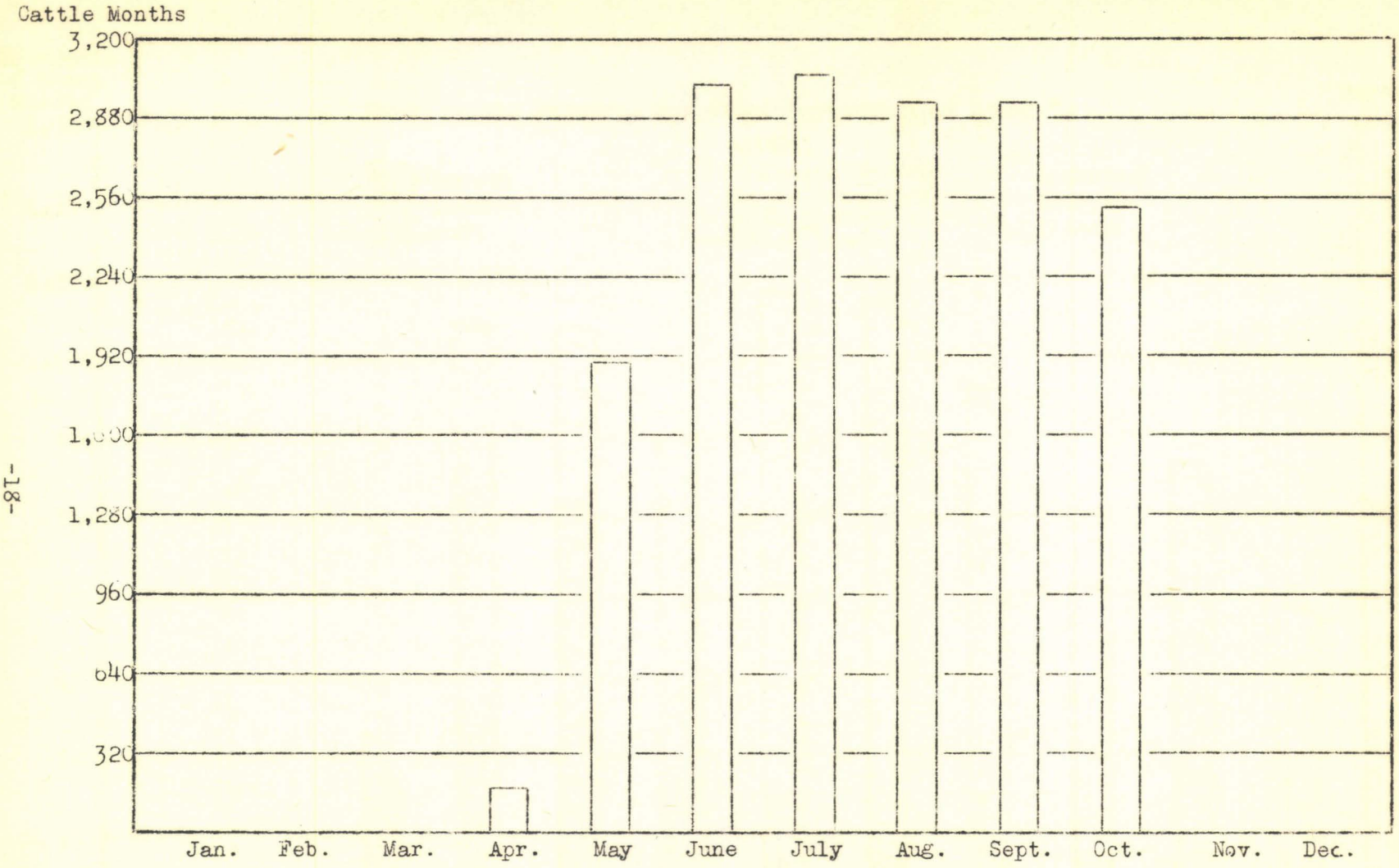

Figure 4.- Months of permitted use for cattle permitted to graze on the Boise National Forest during each month, 1939.

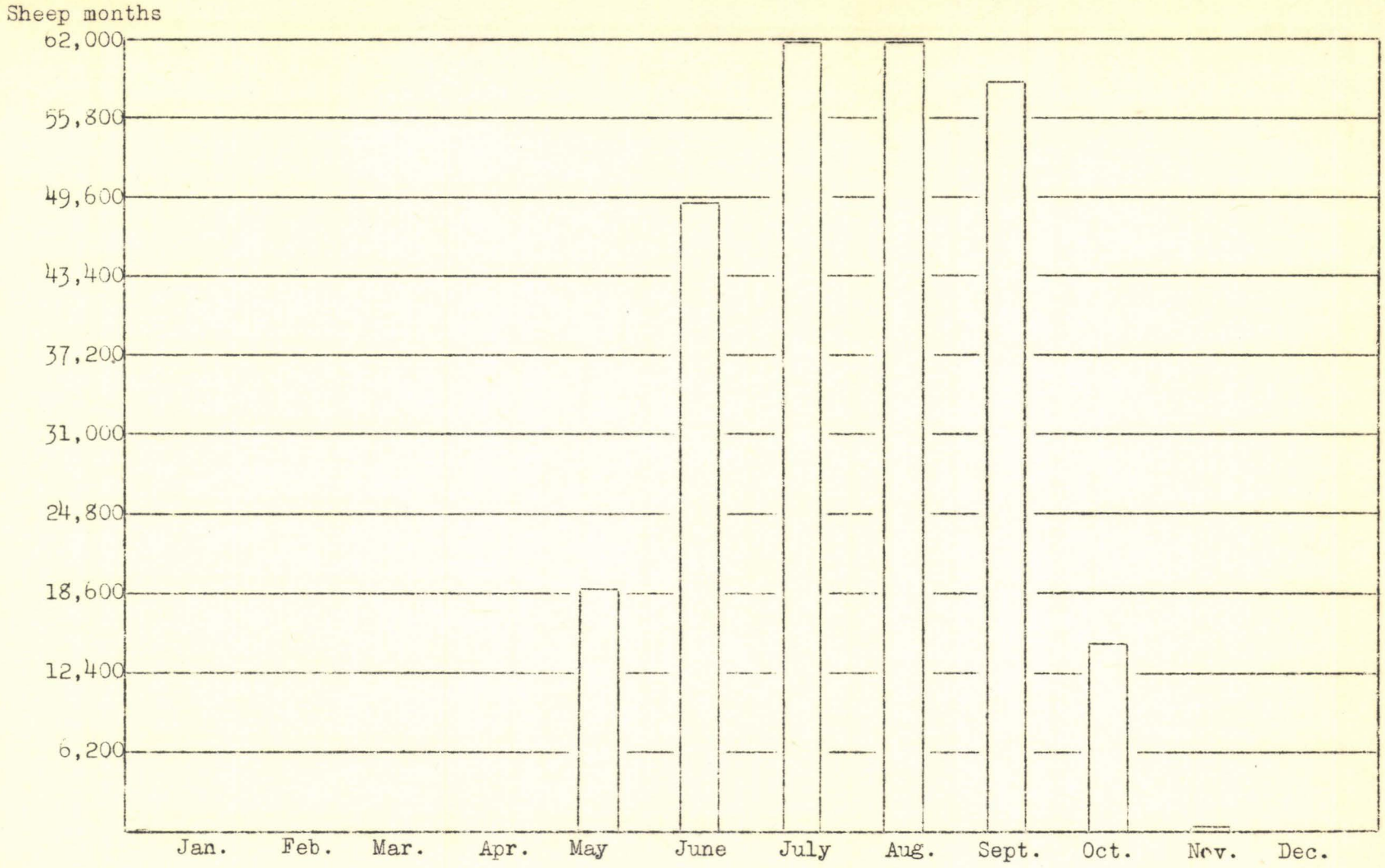

Figure 5.- Months of permitted use for sheep permitted to graze on the Boise National Forest during each month, 1939.

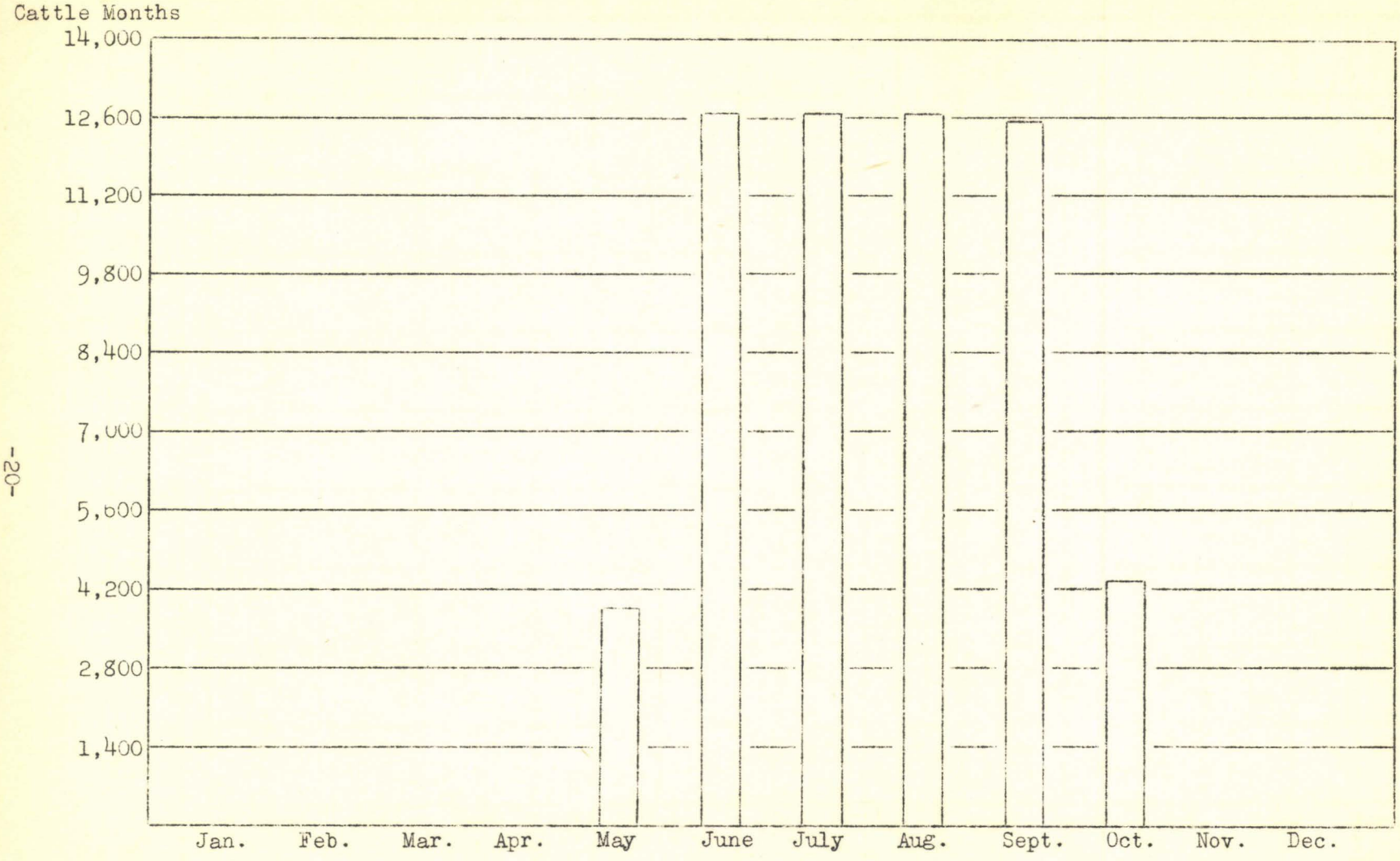

Figure 6.- Months of permitted use for cattle permitted to graze on the Caribou National Forest during each month, 1939.

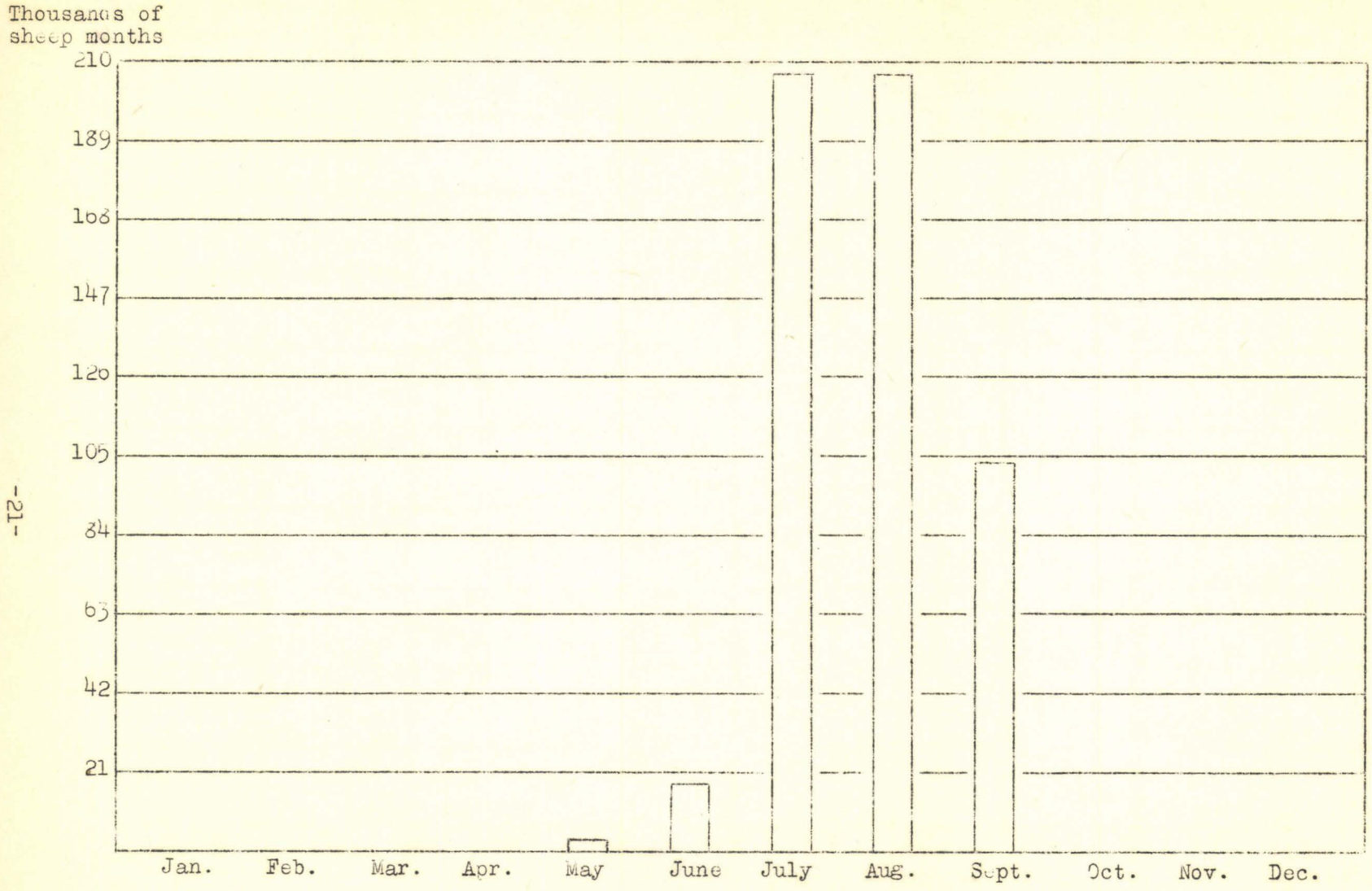

Figure 7.- Months of permitted use for sheep permitted to graze on the Caribou National Forest during each month, 1939.

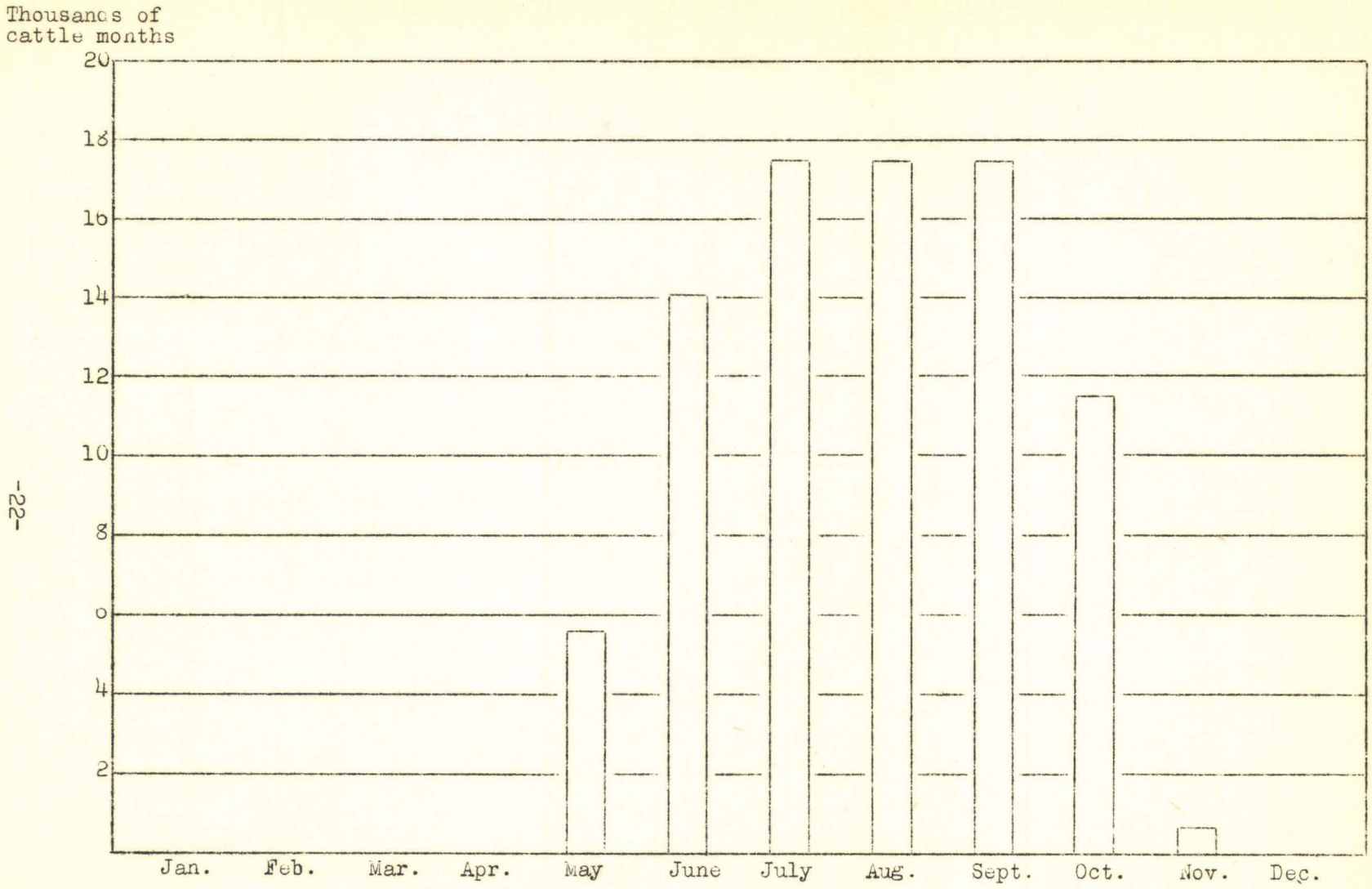

Figure 8.- Months of permitted use for cattle permitted to graze on the Challis National Forest during each month, 1939.

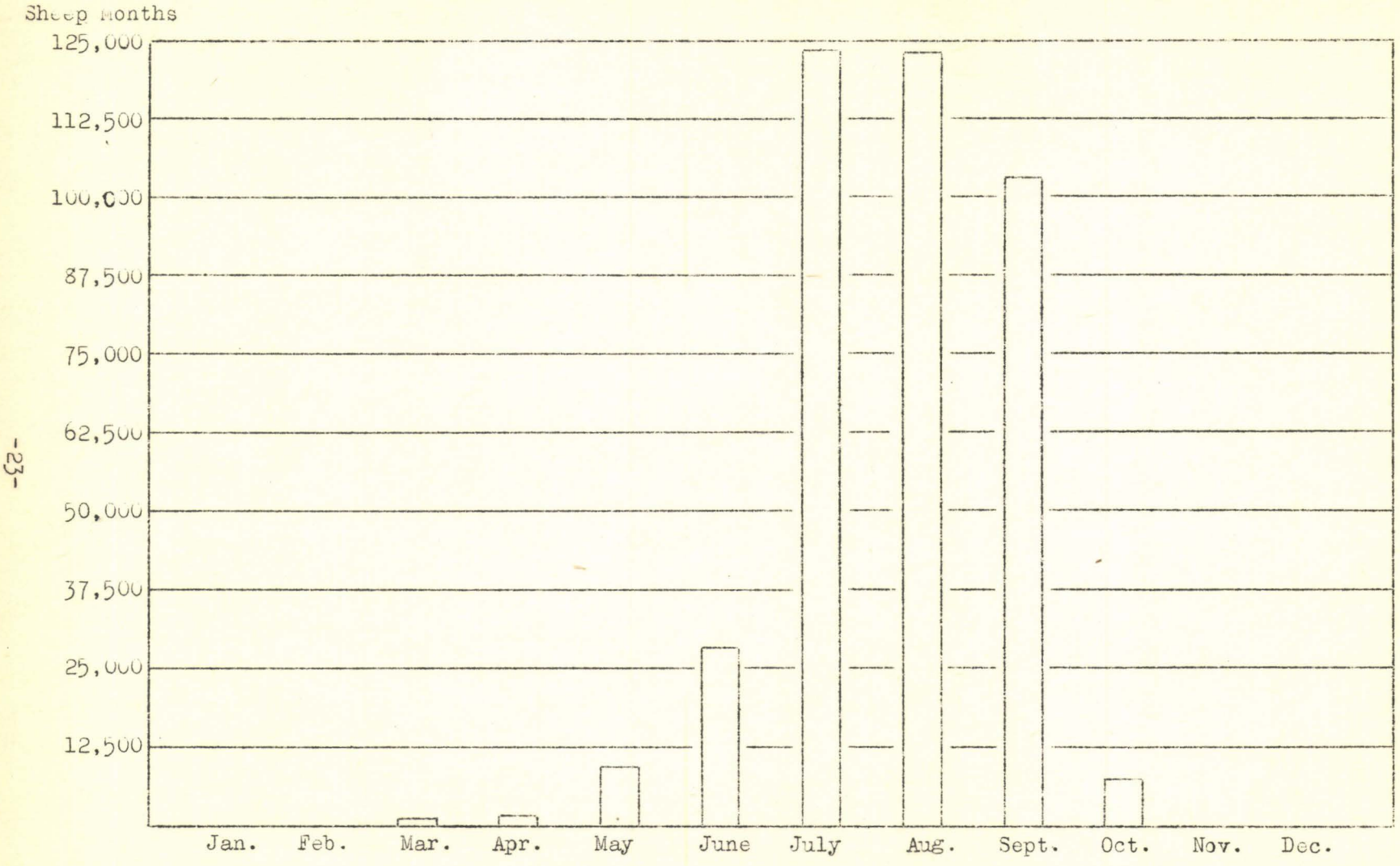

Figure 9.- Months of permitted use for sheep permitted to graze on the Challis National Forest during each month, 1939.

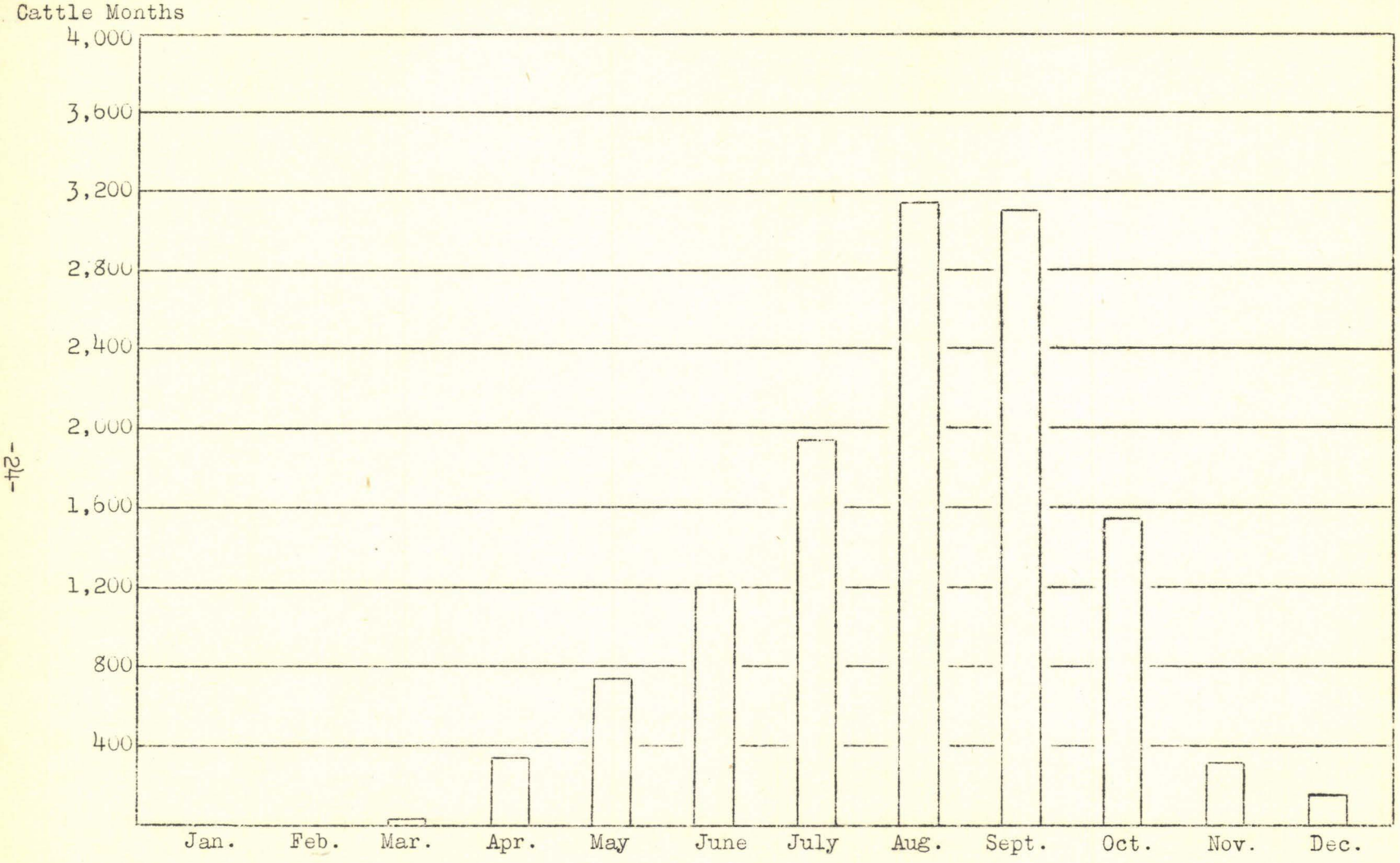

Figure 10.- Months of permitted use for cattle permitted to graze on the Idaho National Forest during each month, 1939.

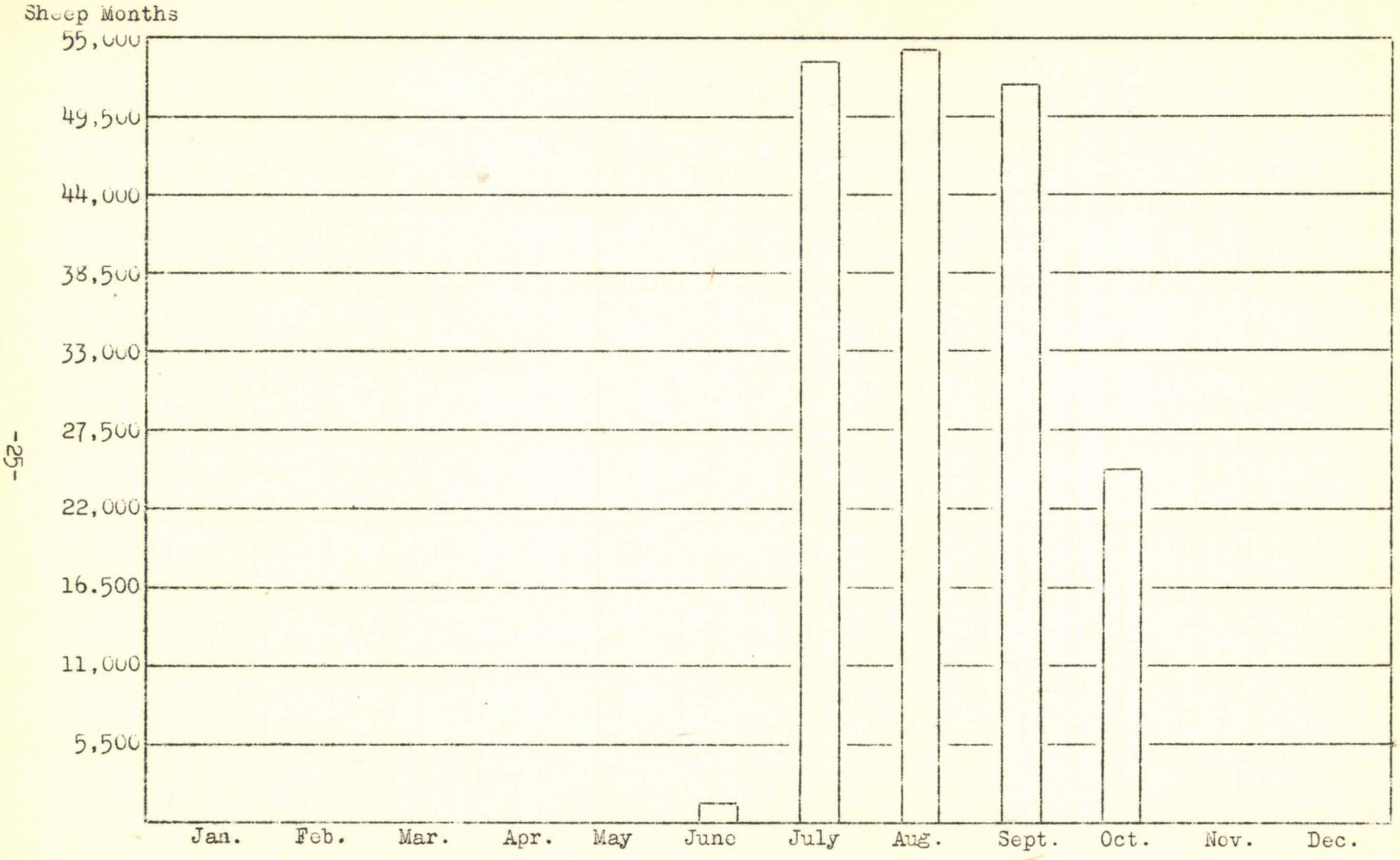

Figure 11.- Months of permitted use for sheep permitted to graze on the Idaho National Forest during each month, 1939.

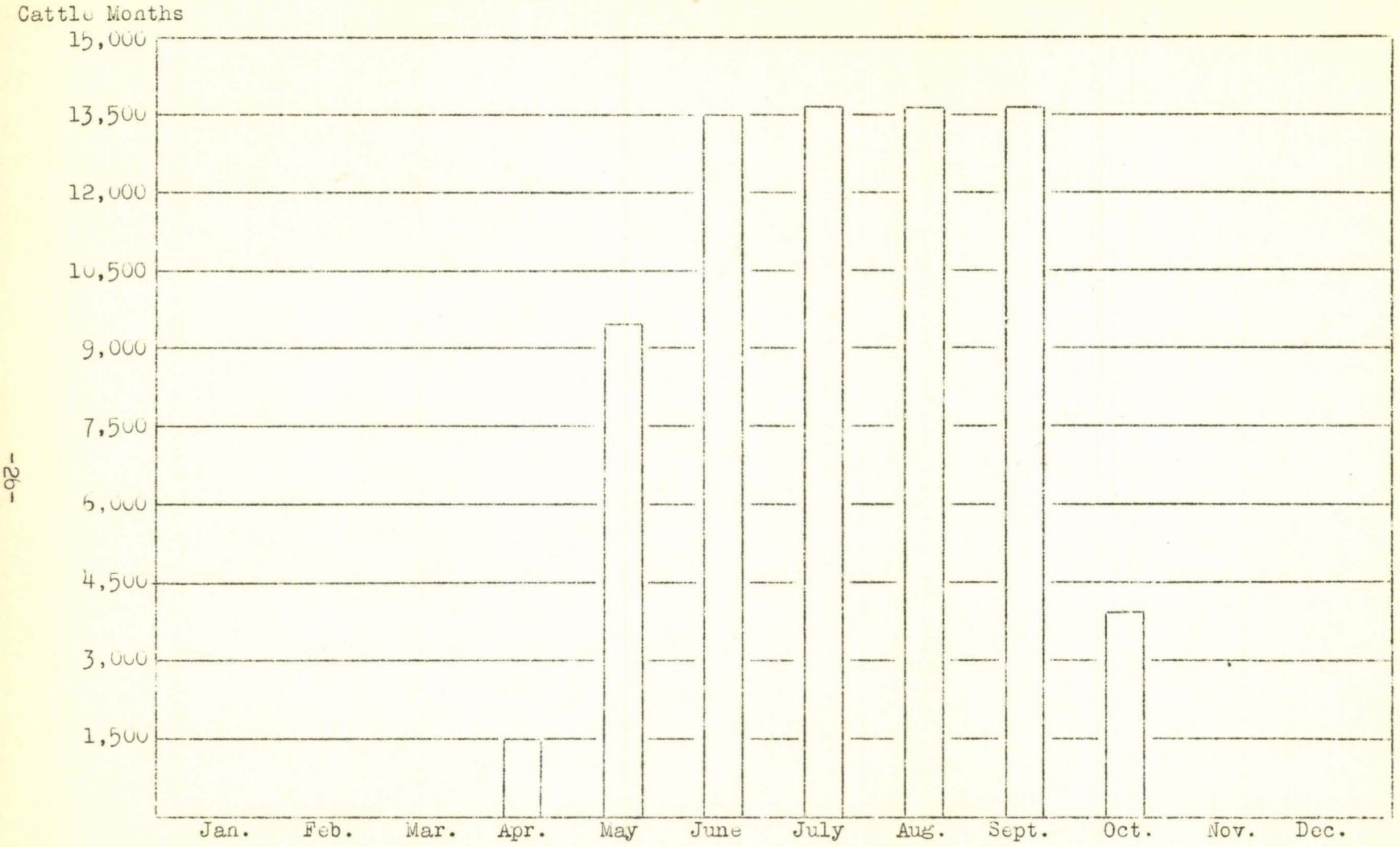

Figure 12.- Months of permitted use for cattle permitted to graze on the Minidoka National Forest during each month, 1939.

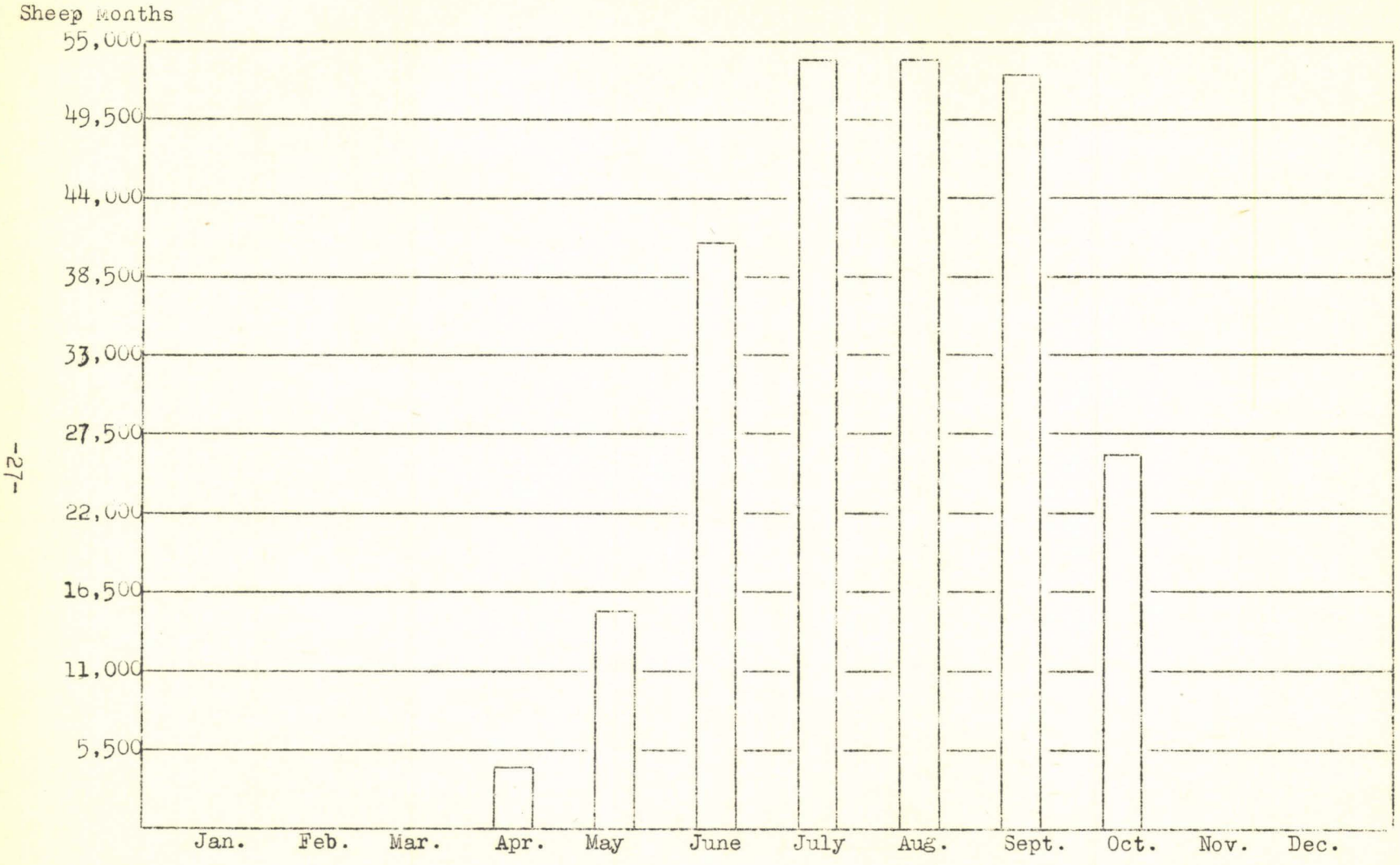

Figure 13.- Months of permitted use for sheep permitted to graze on the Minidoka National Forest during each month, 1939.

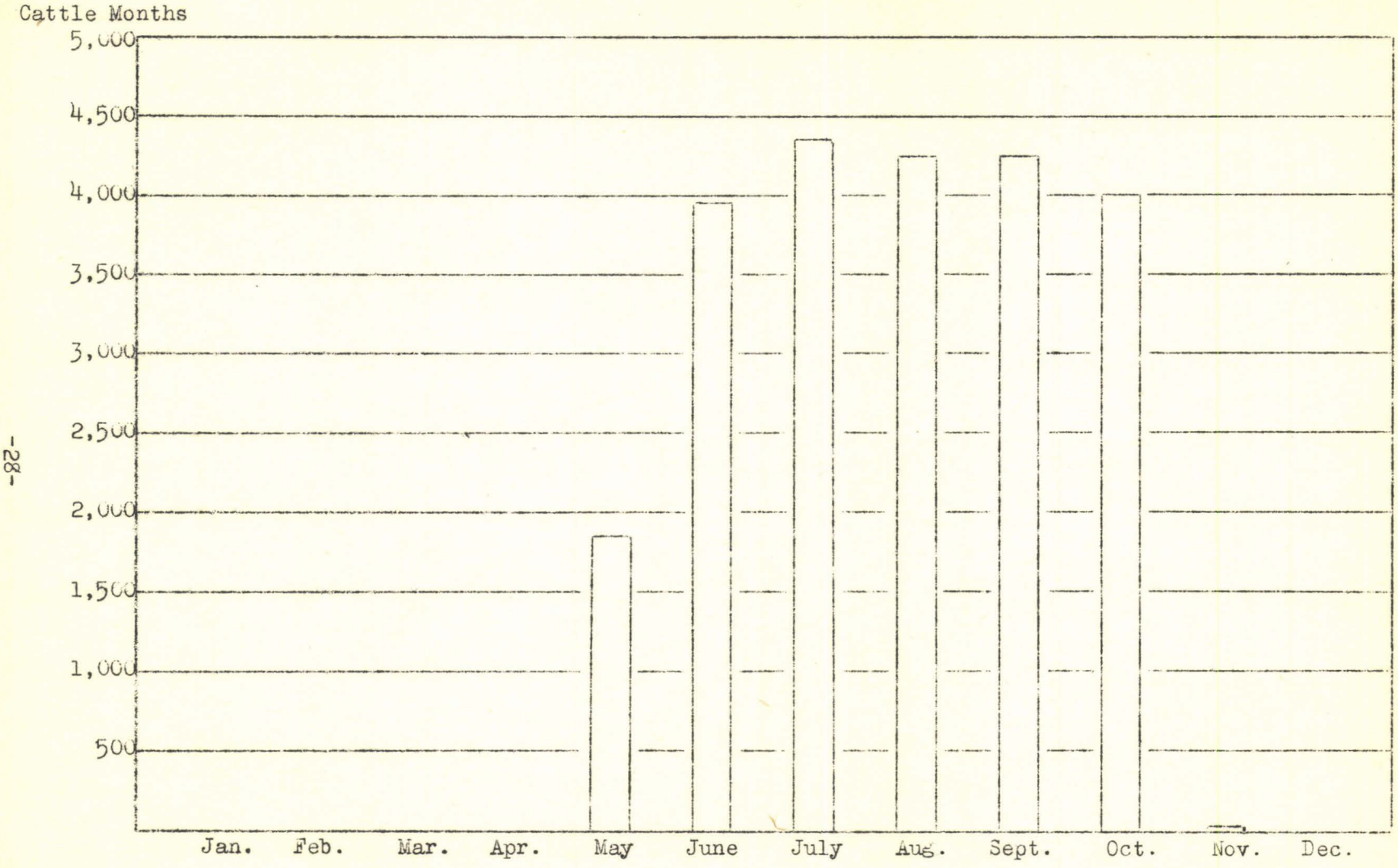

Figure 14.- Months of permitted use for cattle permitted to graze on the Payette National Forest during each month, 1939.

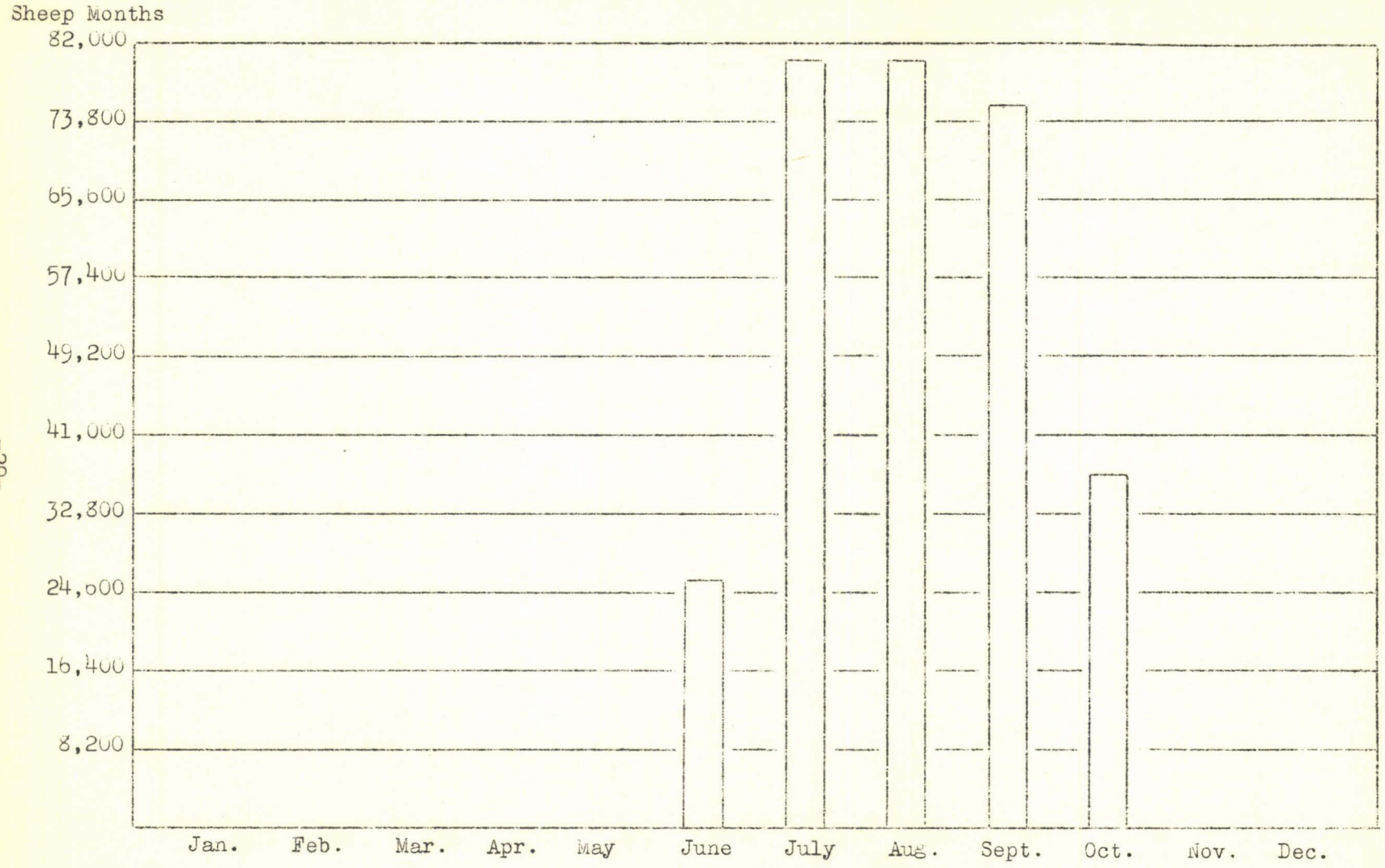

Figure 15.- Months of permitted use for sheep permitted to graze on the Payette National Forest during each month, 1939.

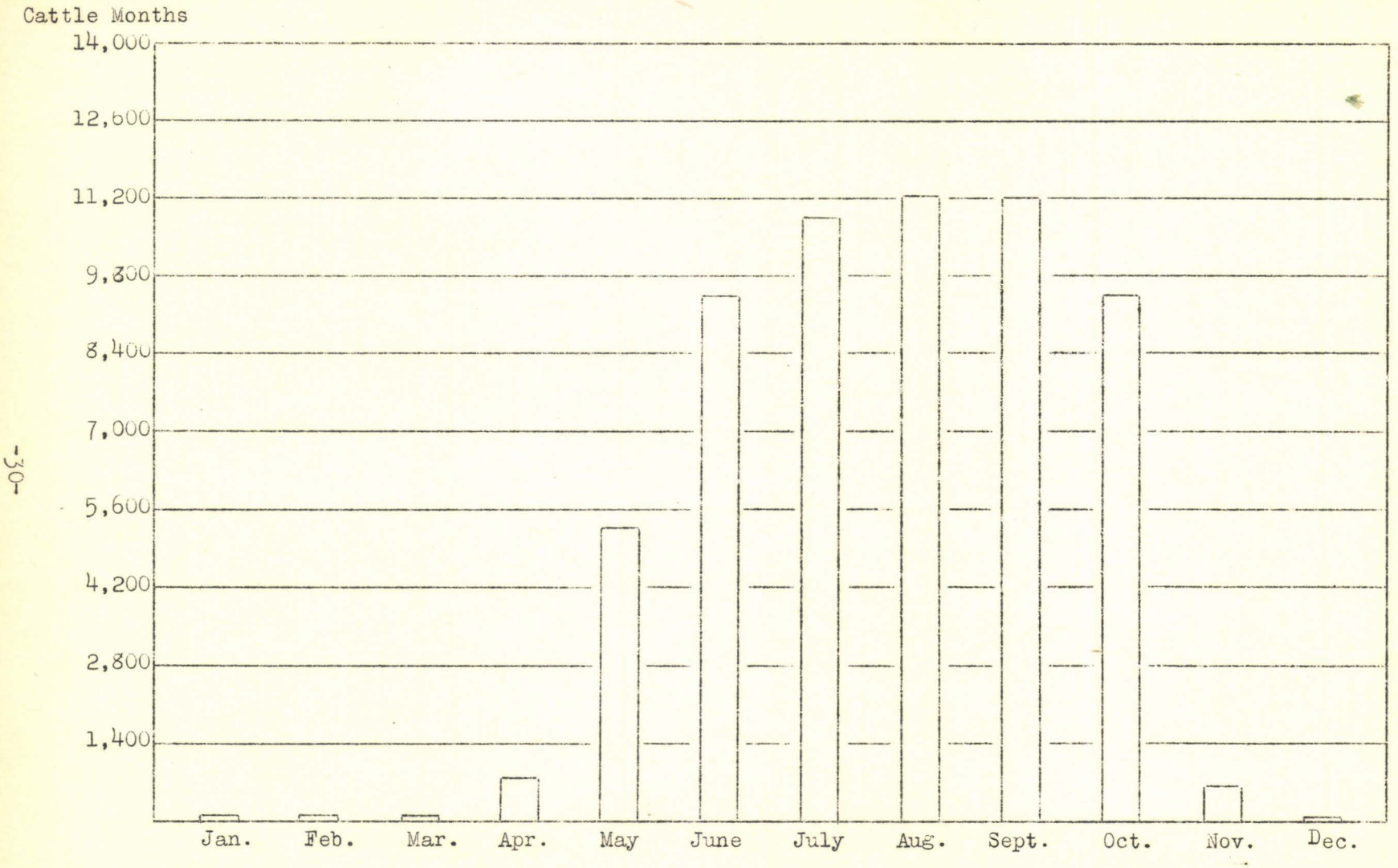

Figure 16.- Months of permitted use for cattle permitted to graze on the Salmon National Forest during each month, 1939.

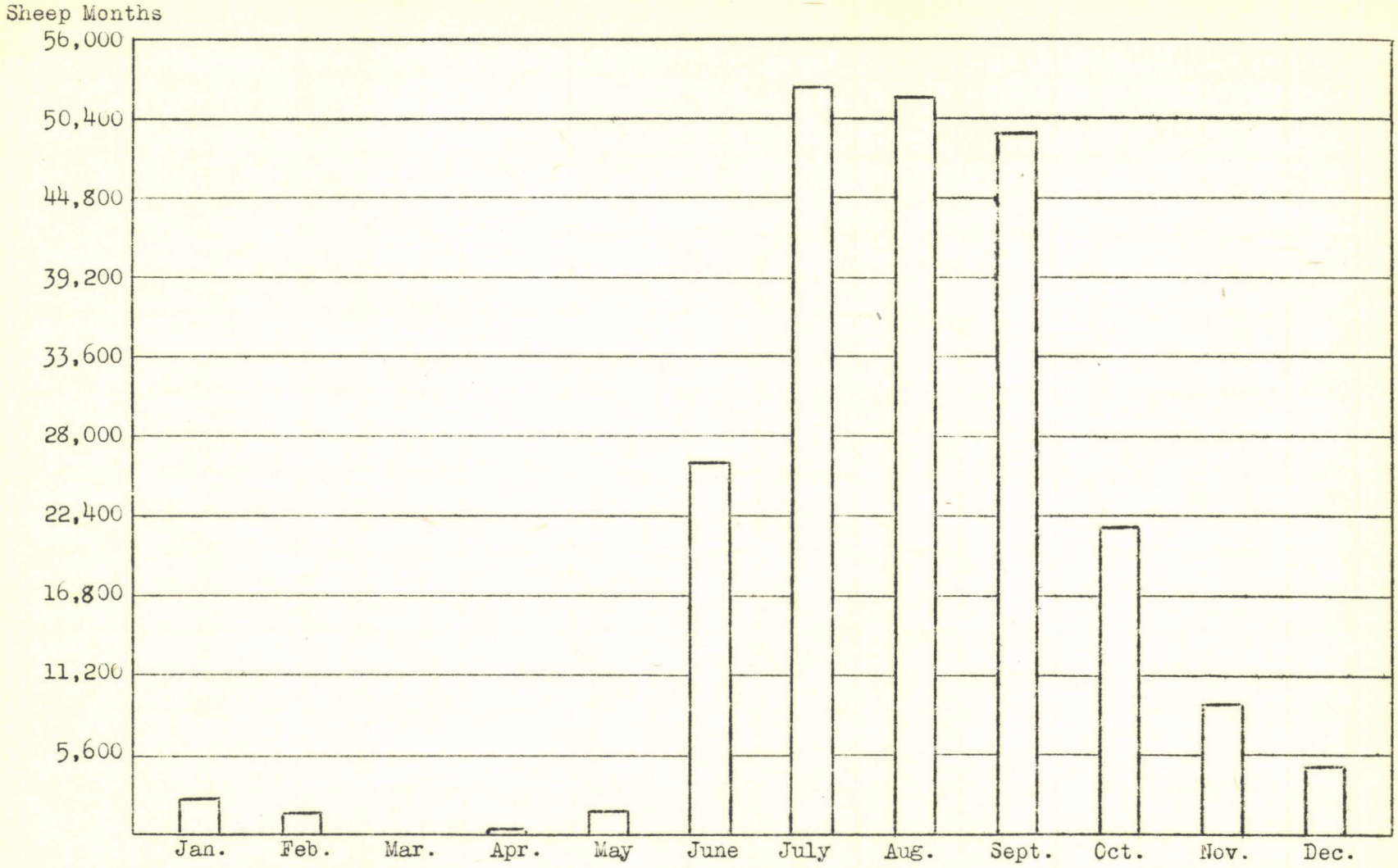

Figure 17.- Months of permitted use for sheep permitted to graze on the Salmon National Forest during each month, 1939.

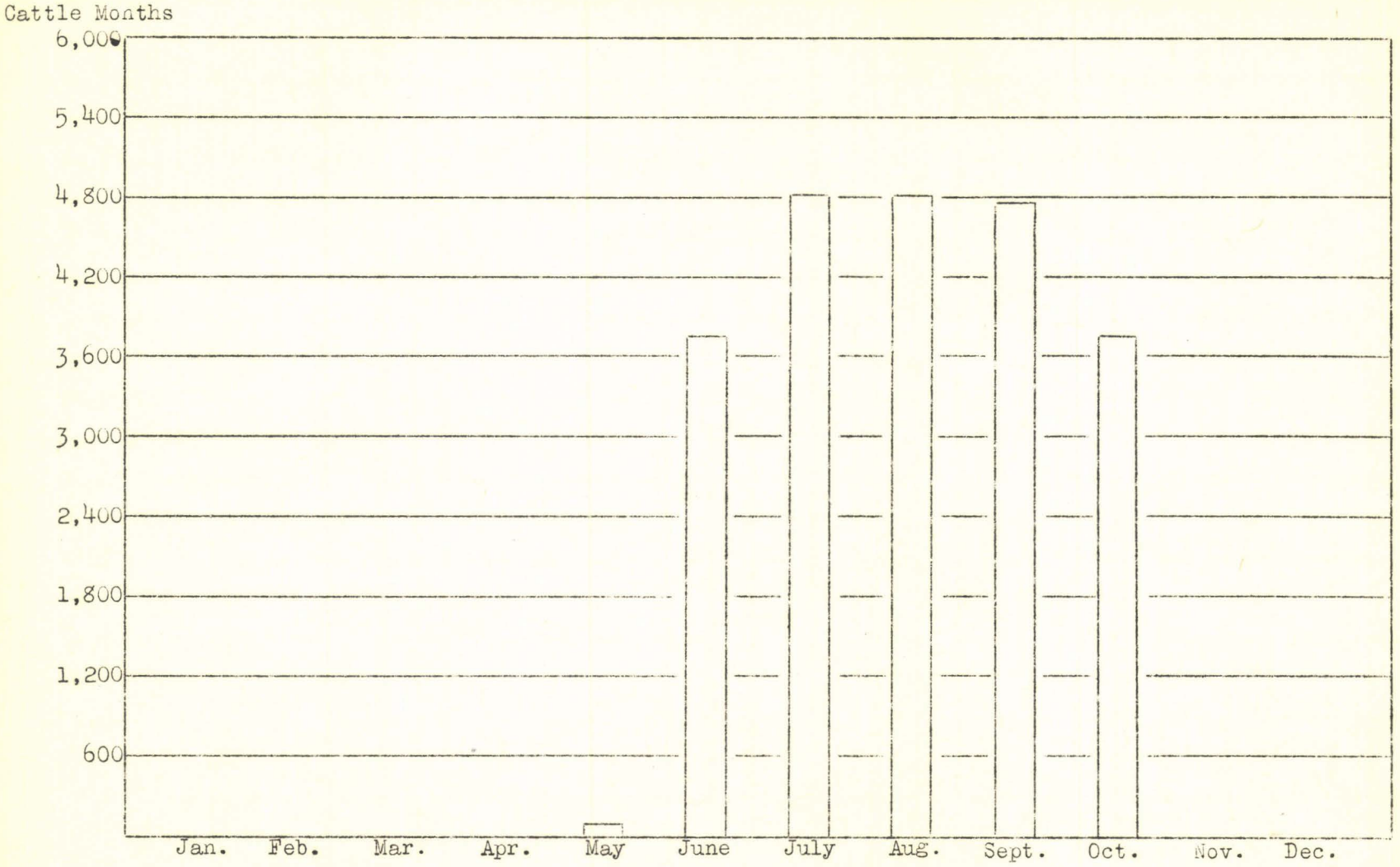

Figure 18.- Months of permitted use for cattle permitted to graze on the Sawtooth National Forest during each month, 1939.

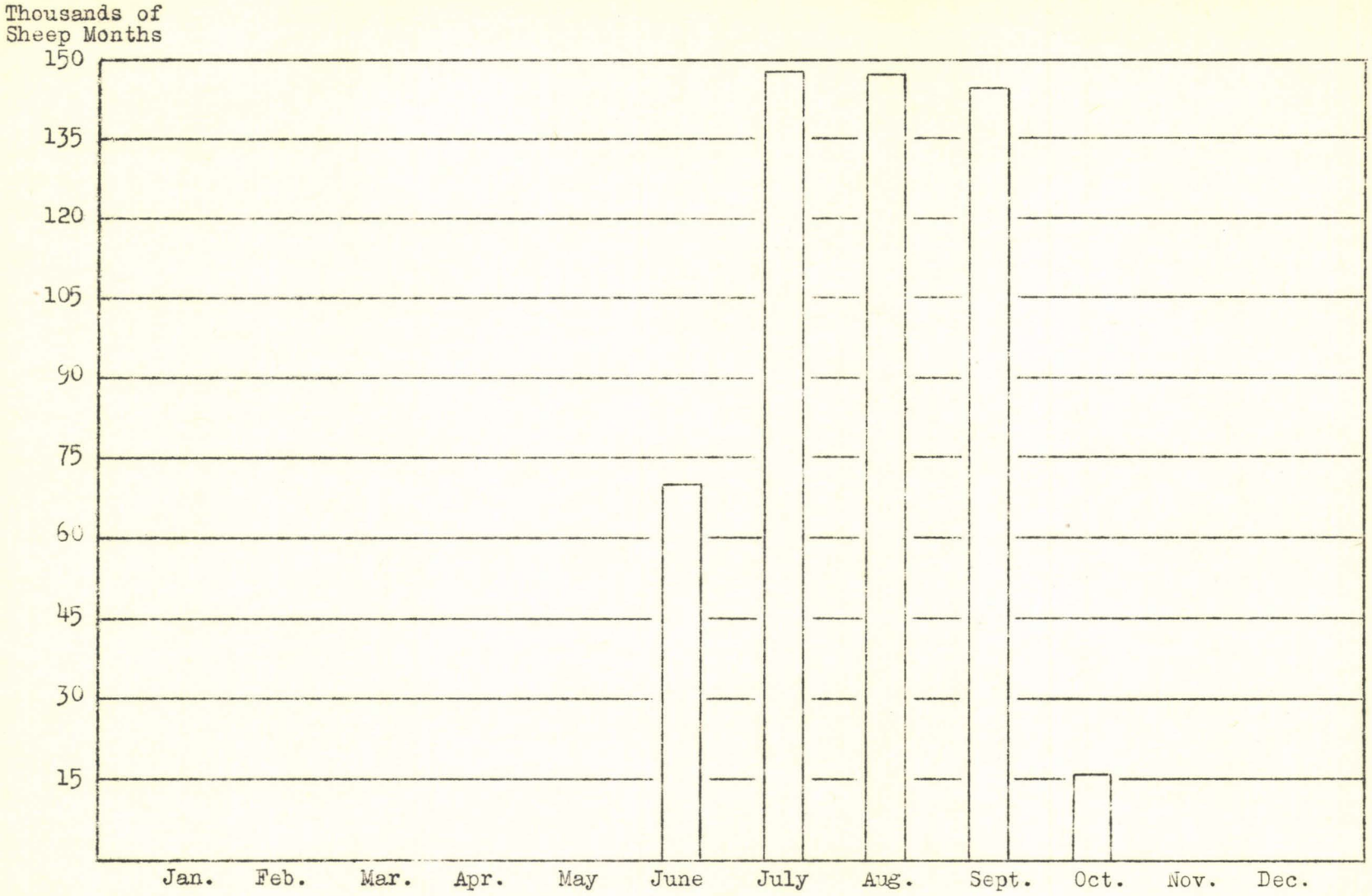

Figure 19.- Months of permitted use for sheep permitted to graze on the Sawtooth National Forest during each month, 1939.

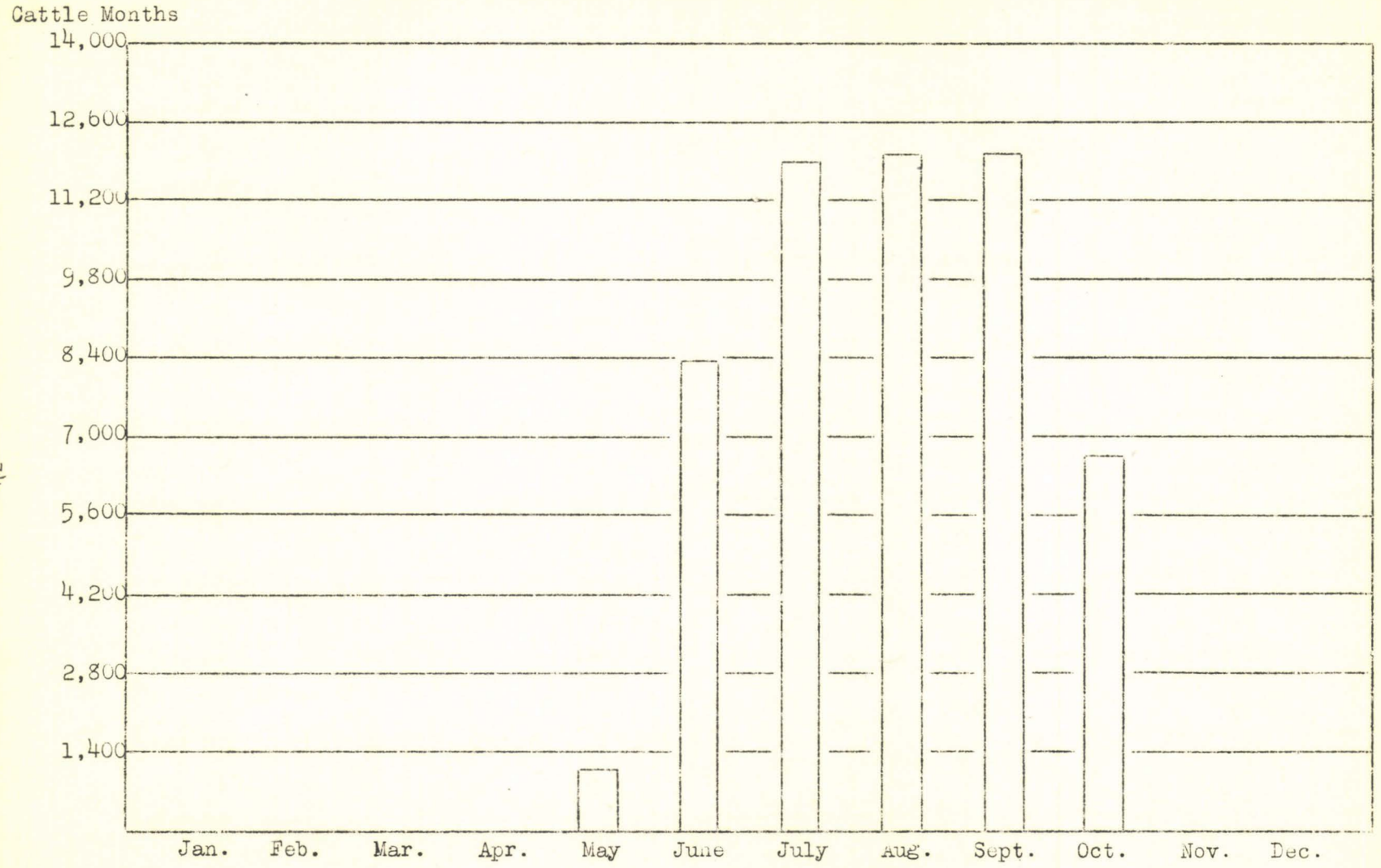

Figure 20.- Months of permitted use for cattle permitted to graze on the Targhee National Forest during each month, 1939.

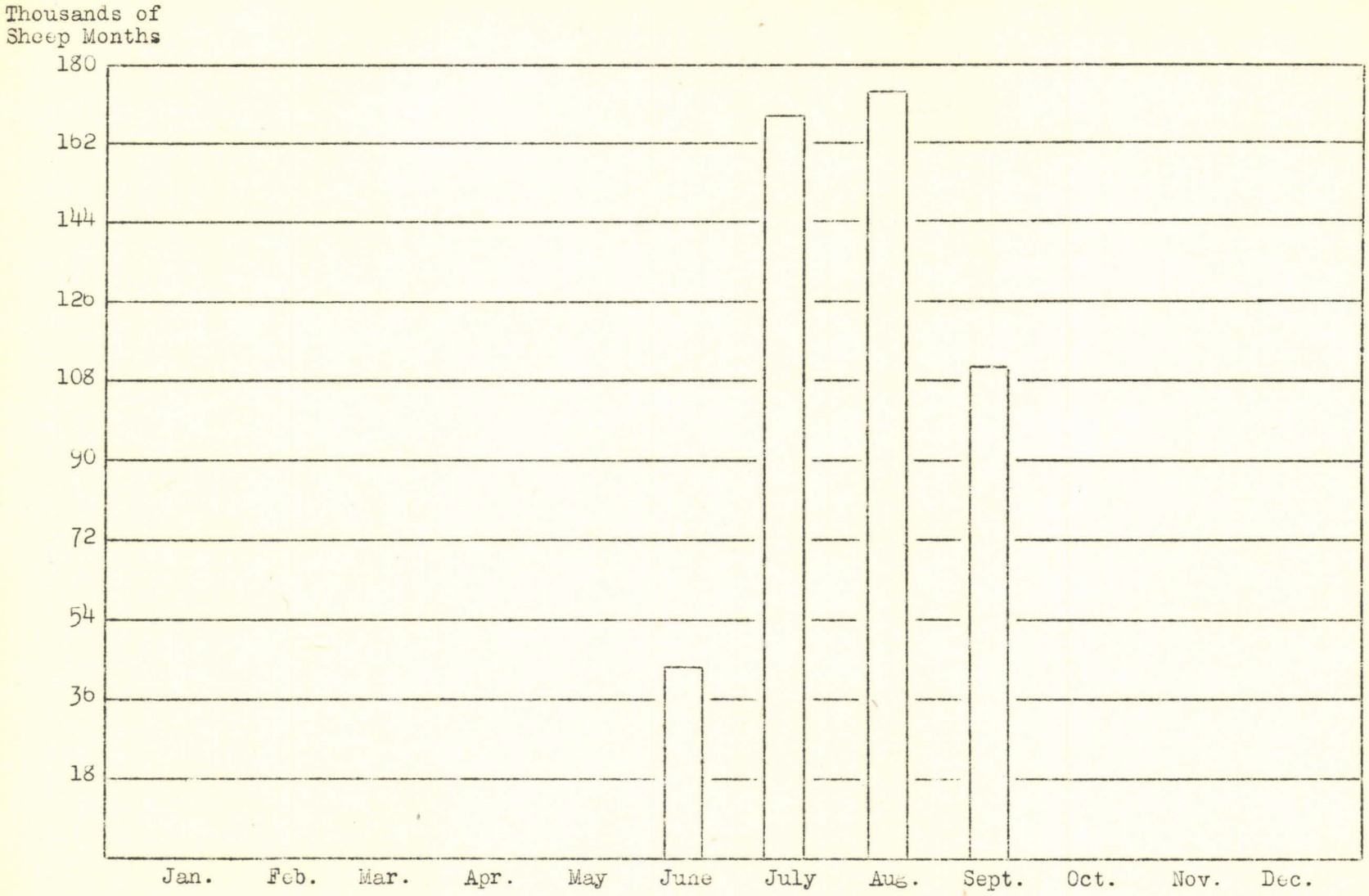

Figure 21.- Months of permitted use for sheep permitted to graze on the Targhee National Forest during each month, 1939.

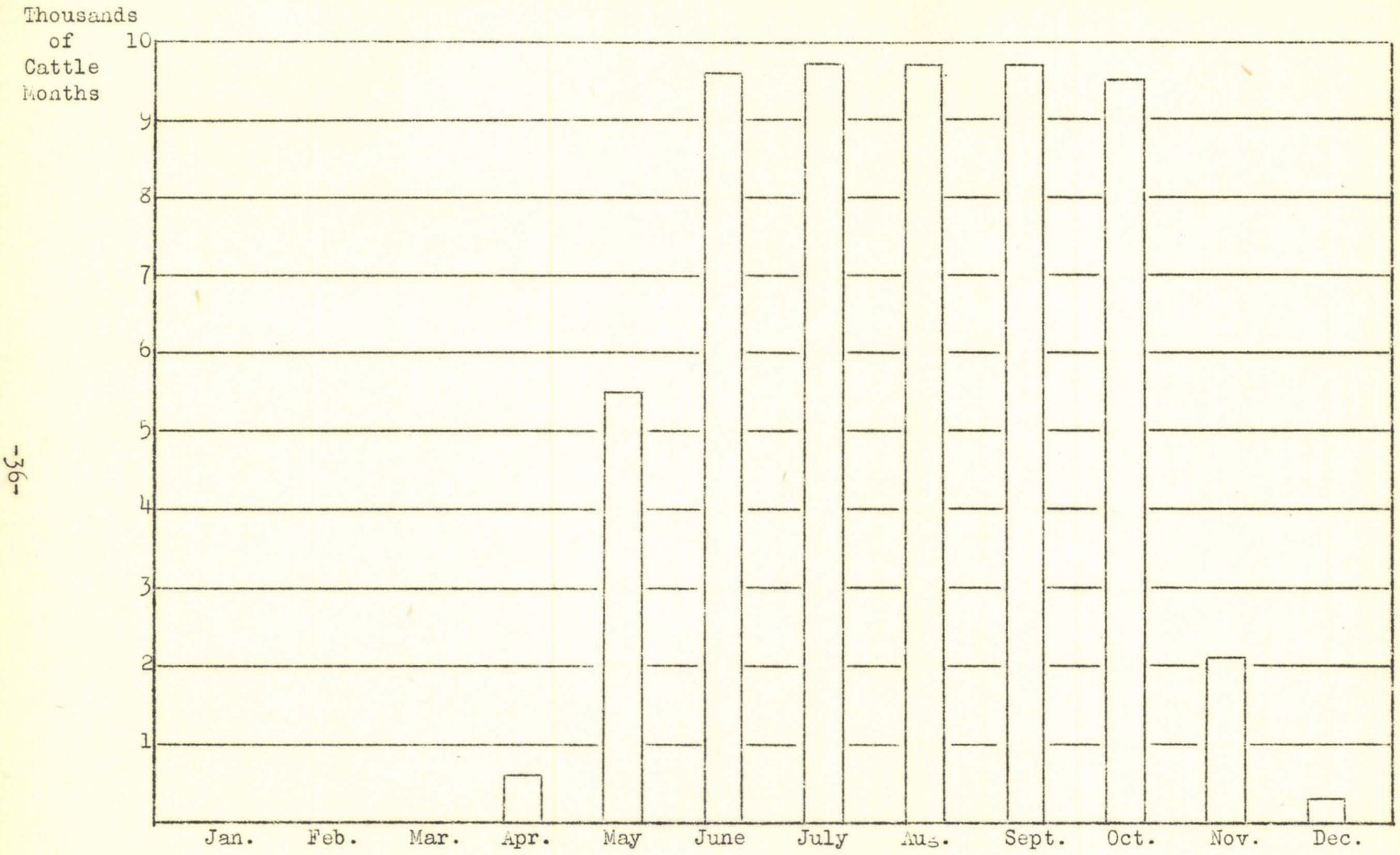

Figure 22.- Months of permitted use for cattle permitted to graze on the Weiser National Forest during each month, 1939.

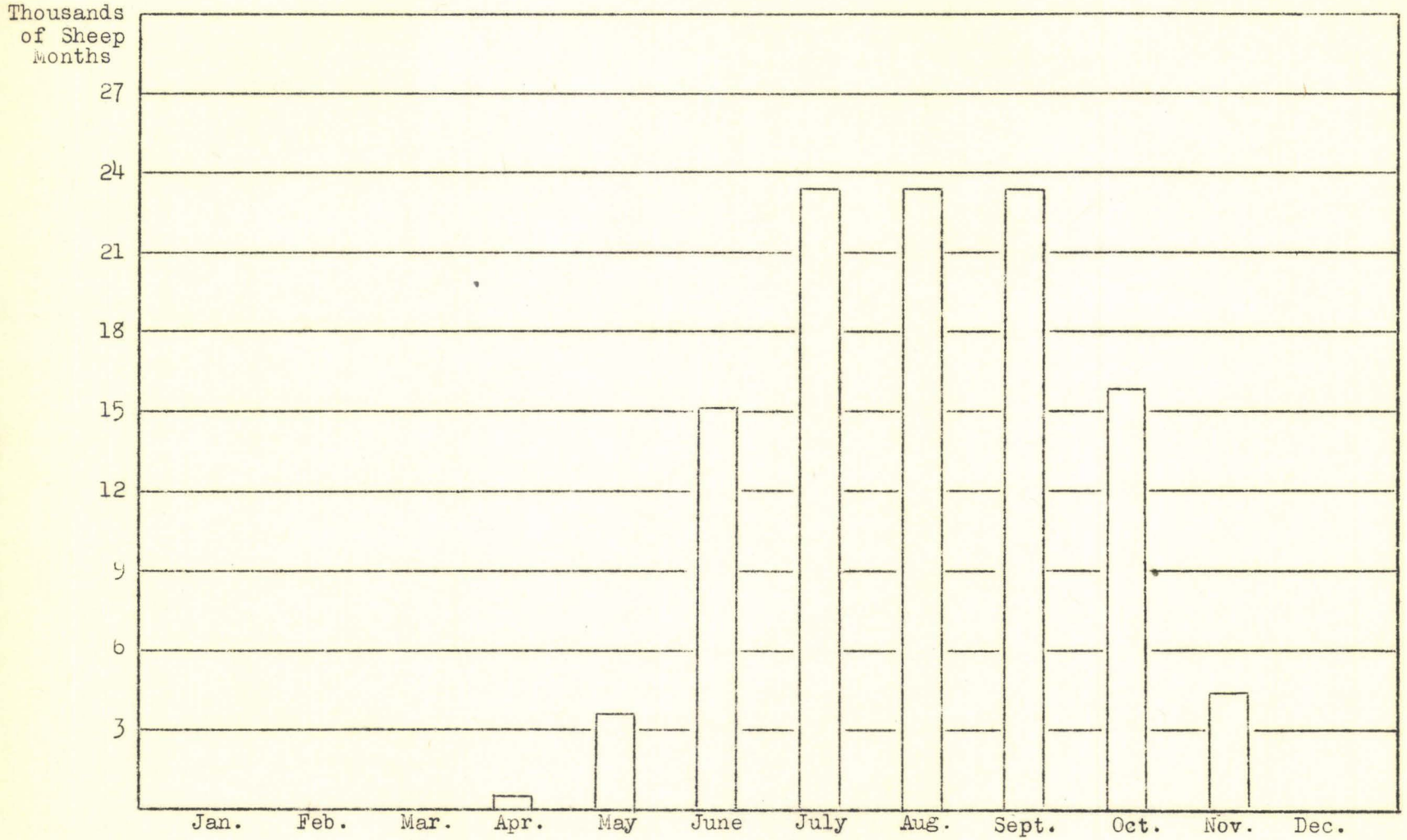

Figure 23.- Months of permitted use for sheep permitted to graze on the Weiser National Forest during each month, 1939.

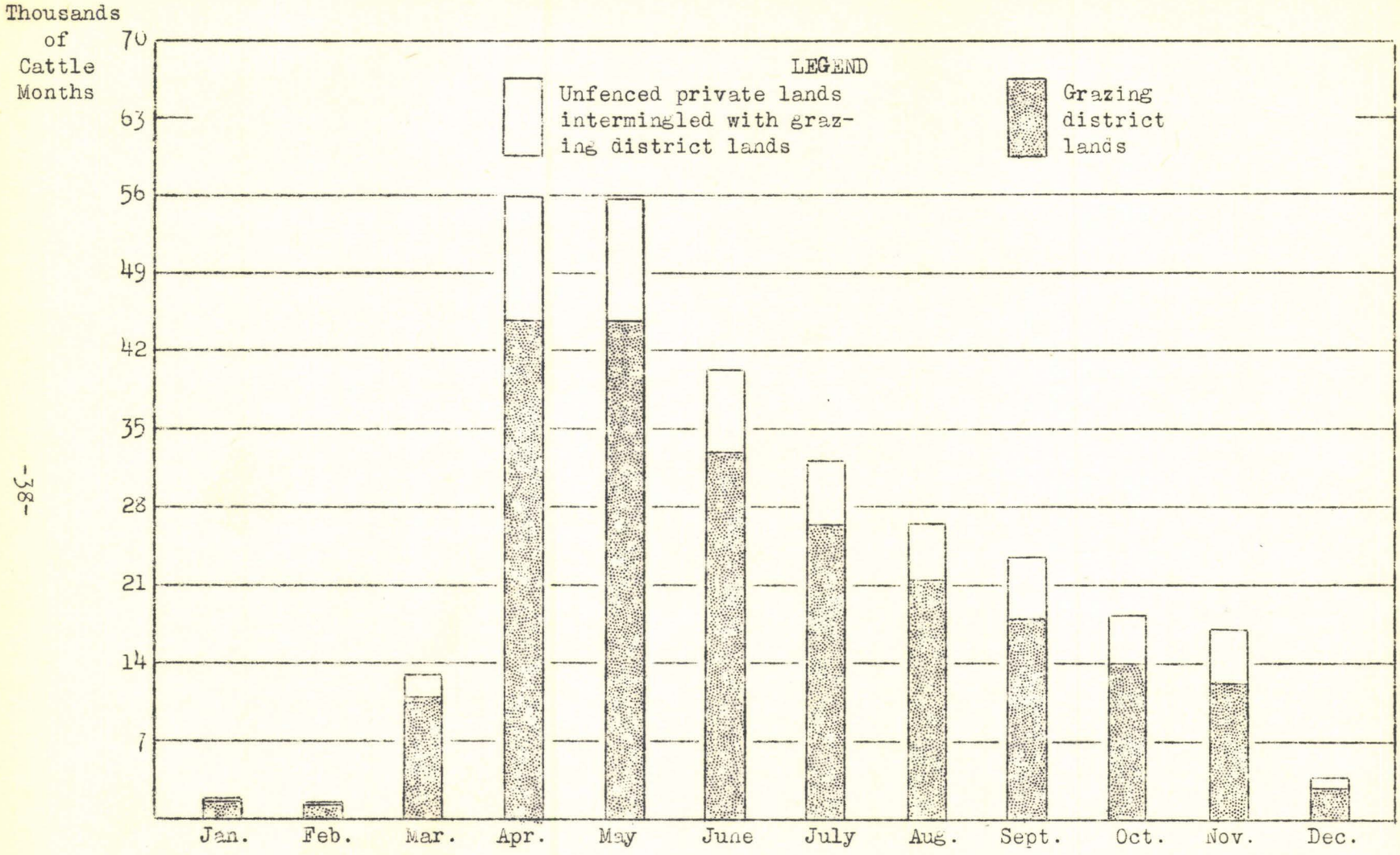

Figure 24.- Months of permitted use for cattle licensed to graze on the Owyhee Grazing District during each month, 1939-1940.

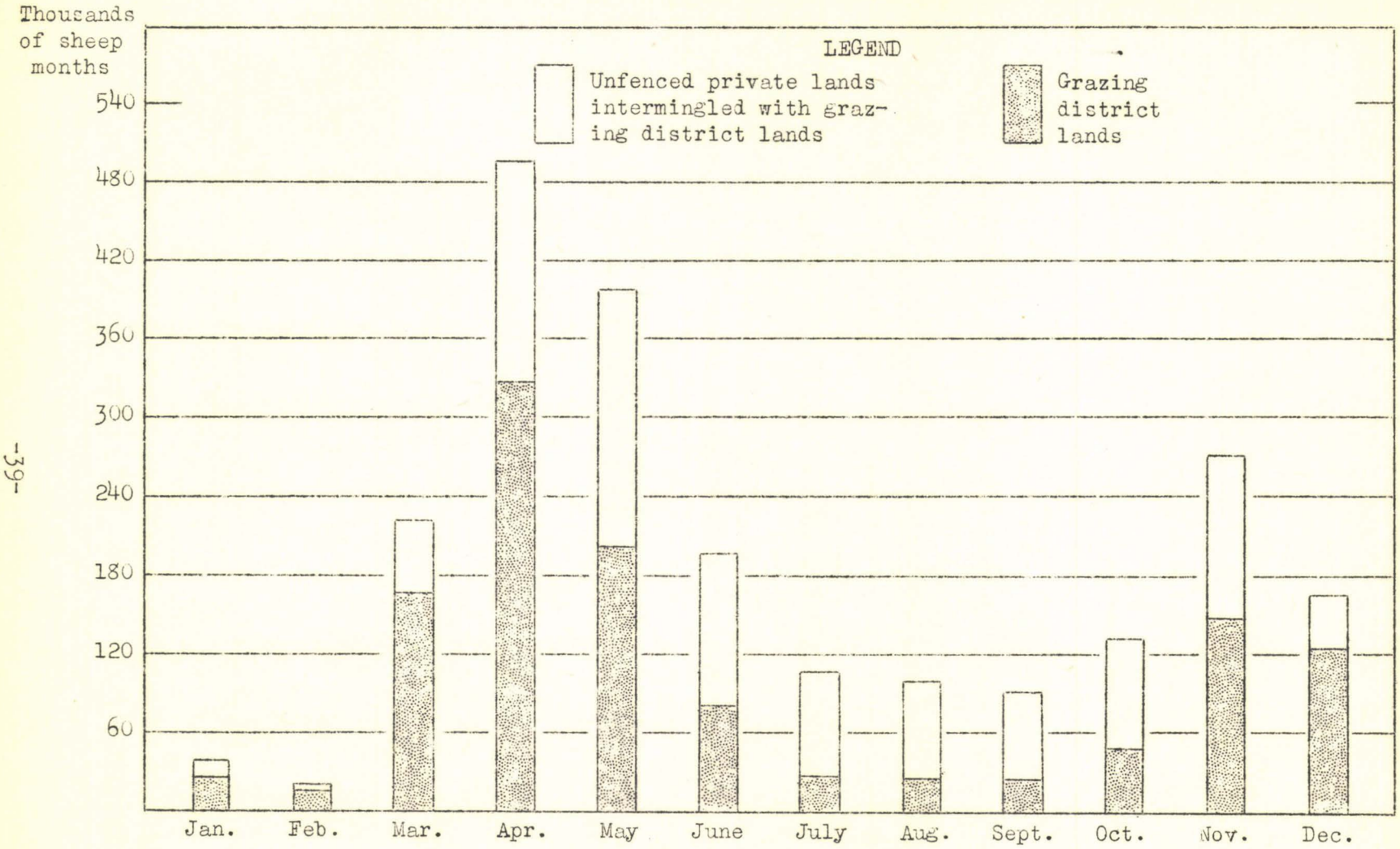

Figure 25.- Months of permitted use for sheep licensed to graze on the Owyhee Grazing District during each month, 1939-1940.

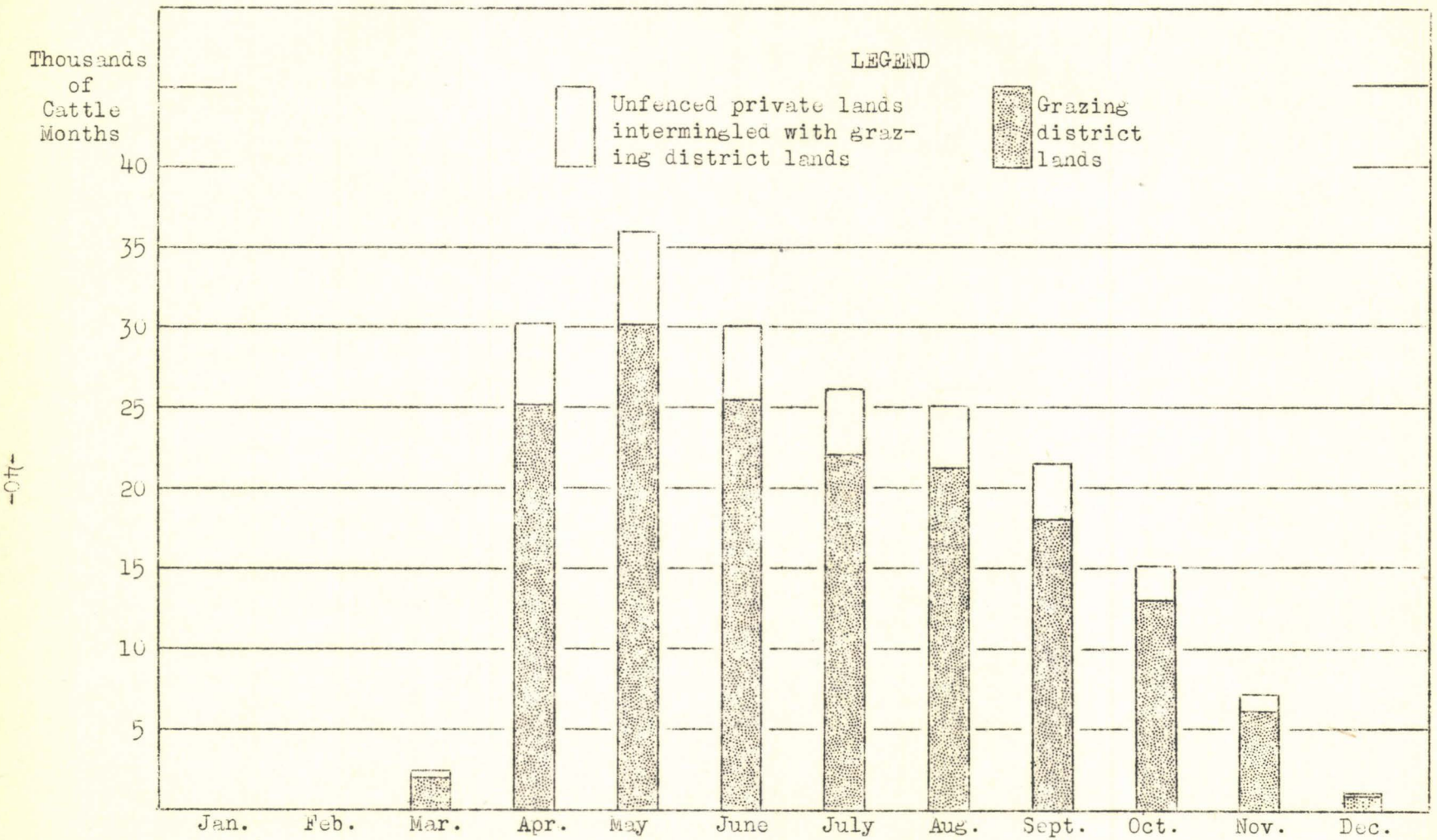

Figure 26.- Months of permitted use for cattle licensed to graze on the Twin Falls and wood River Districts during each month, 1939-1940.

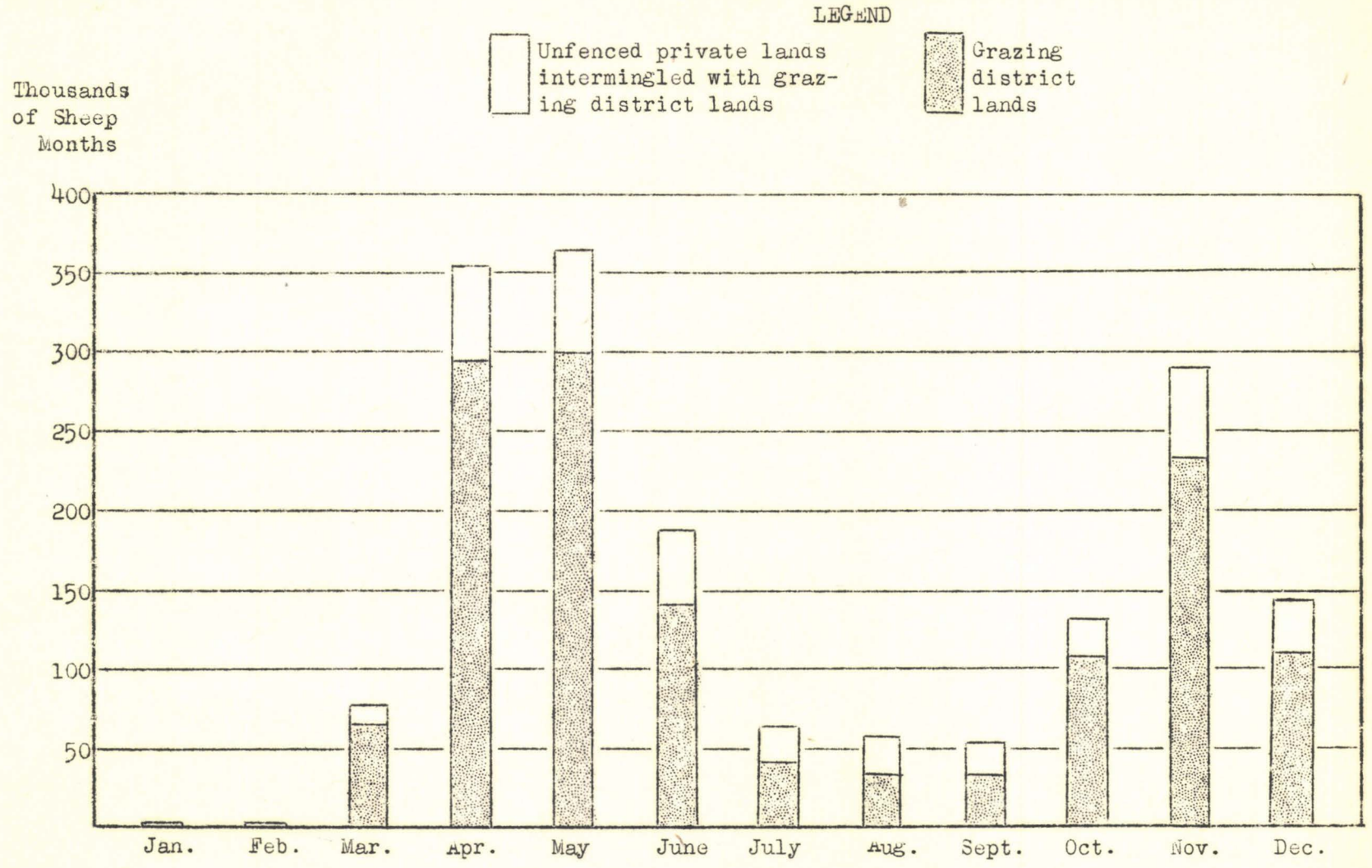

Figure 27.- Months of permitted use for sheep licensed to graze on the Twin Falls and Wood River Grazing Districts during each month, 1939-1940.

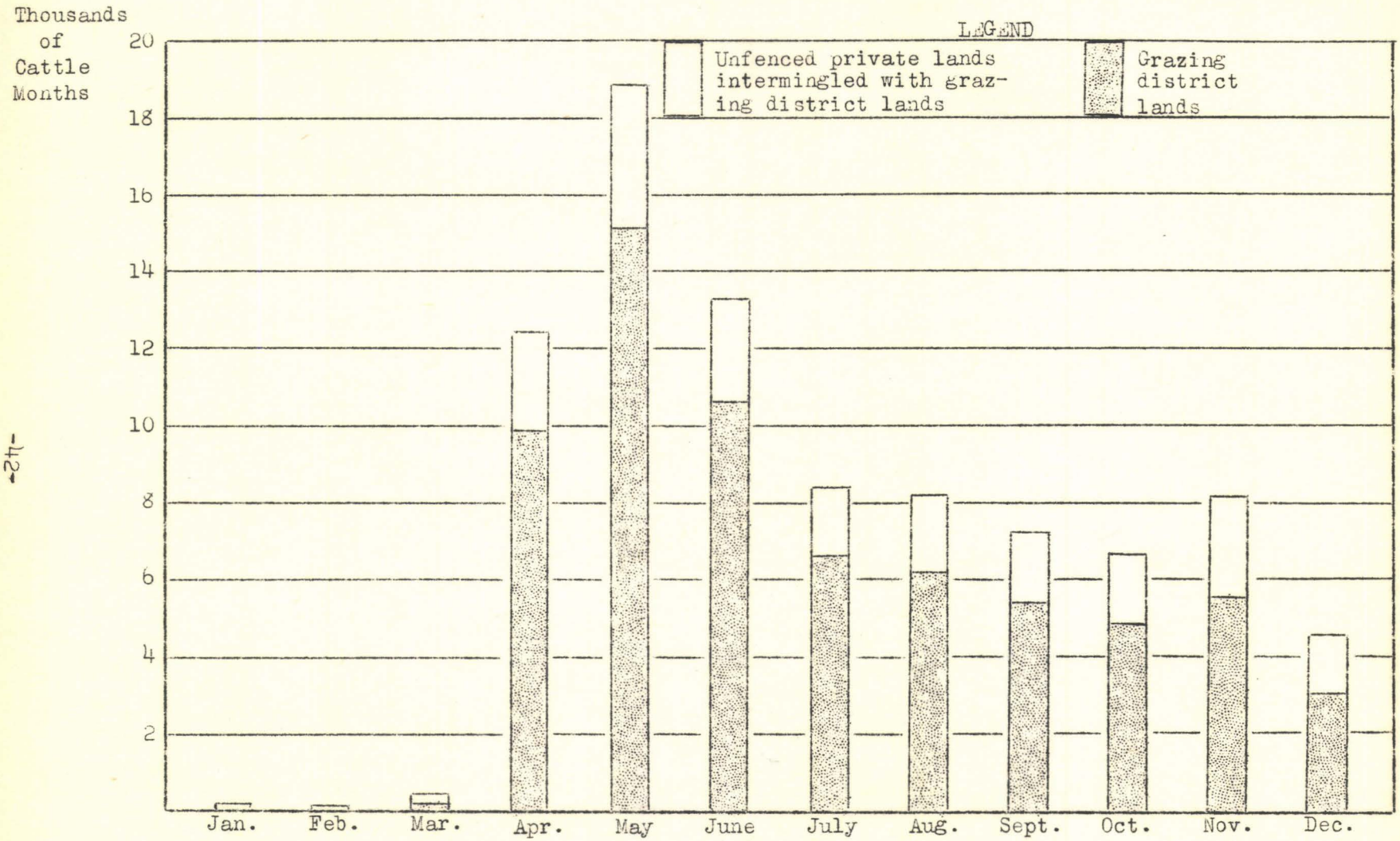

Figure 28.- Months of permitted use for cattle licensed to graze on the Lost River Grazing District during each month, 1939-1940.

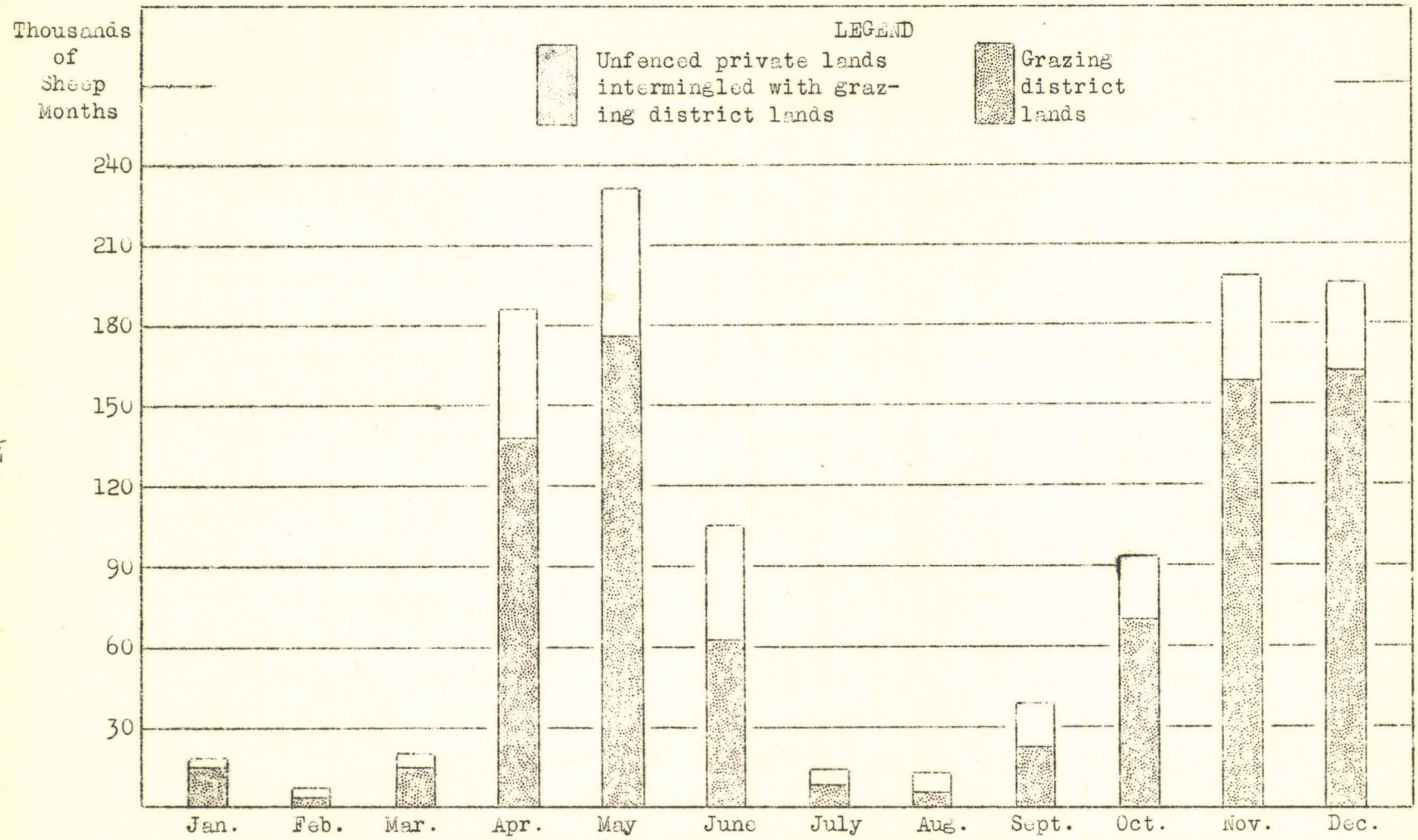

Figure 29.- Months of permitted use for sheep licensed to graze on the Lost River Grazing District during each month, 1939-1940.

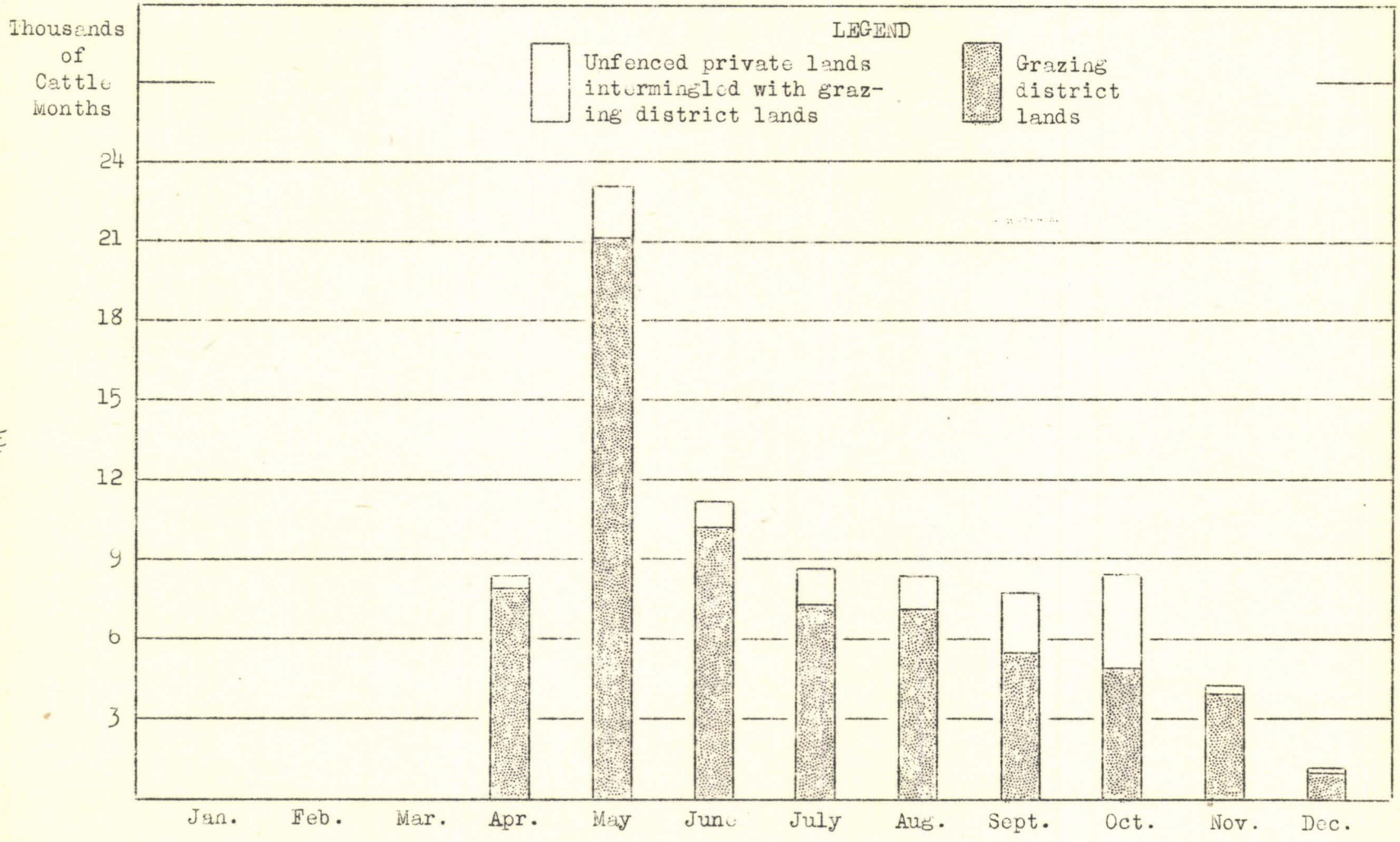

Figure 30.- Months of permitted use for cattle licensed to graze on the Lemhi Grazing District during each month, 1939-1940.

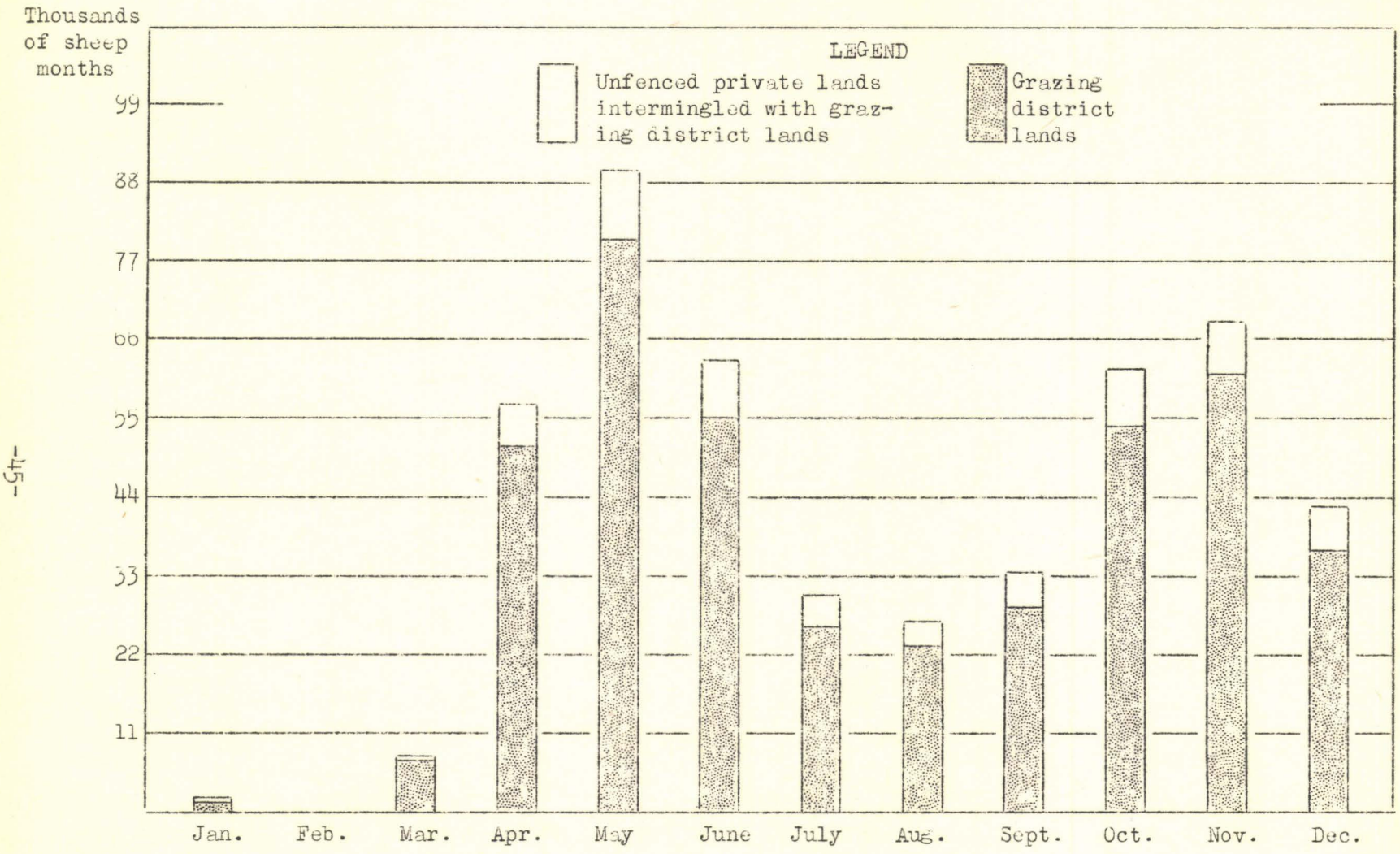

Figure 31.- Months of permitted use for sheep licensed to graze on the Lemhi Grazing District during each month, 1939-1940.

NEVADA 9/

Although Nevada is a state with the great majority of its land in public ownership, and ranch operations are generally based on extensive use of the public ranges, much of the feed for the cattle population is secured from privately owned range and feed producing land (figure 32). During the winter months, November through March, most of the cattle are maintained on hay and private pastures. During the spring the grazing districts provide most of the range. The national forest ranges best suited to cattle use afford good summer feed for part of the cattle. A small percentage of the cattle in the western part of the state summer in California. In July and August the grazing district range use by cattle decreases, due to lack of feed on these lower ranges, sales of beef, and the drying up of watering places. From these ranges the cattle are moved onto private pastures and meadows where the hay has been harvested. This graph shows how closely the public ranges are tied up with the privately owned lands in beef cattle production in Nevada.

Sheep production in Nevada is based almost entirely on the use of public and private ranges with very little harvested feed used. About 50,000 of the 830,000 Nevada sheep population are in farm flock ownerships, and these use farm pastures and harvested feeds during a good part of the year. Nevada range sheep use the public ranges for between 60 and 70 percent of their feed. During the winter months the sheep are on the grazing districts, and approximately 150,000 sheep, 18 percent, winter on the unregulated public domain in central and southern Nevada. The grazing districts and unregulated public domain are also used during

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9/ Does not include the small portions of the Mono and Inyo National Forests, but does include all grazing district lands in Nevada.

the spring months, but there is some shift in the areas used as the sheep move towards the summer ranges. Much of the summer range is on the high ranges of the national forests. Sheep cannot summer on the lower ranges as well as cattle. Figure 33 shows only the use of the Nevada national forests by Nevada sheep. In addition to this, about 100,000 sheep move into California from the Virginia City Grazing District to summer on the Mono and Inyo National Forests and private lands that lie along the Nevada-California line. Approximately 75,000 sheep move into northern California from the Pyramid Grazing District and summer on privately owned lands and the Lassen and Modoc National Forests. In the fall they trail back into Nevada for fall and winter range. Besides this use there are around 100,000 sheep that summer on the unregulated public domain area in central Nevada. (See figure 1.) Range sheep production in Nevada is organized around the use of distinct seasonal ranges which the sheep move to and from in the spring and fall. The private range lands intermingled with grazing district lands are principally leased railroad lands. In the cattle operations these lands are more frequently owned than is the case with sheep ranches.

Humboldt National Forest

The cattle use on the Humboldt National Forest is principally from June through October. There is some year-round use permitted on the forest in the locality around Mountain City, but these operators generally do not actually use the forest during the winter months. Most of these cattle secure spring range from the Elko Grazing District, during the fall use harvested hay meadows, and are fed hay during the winter.

The sheep use is entirely during the summer. Sheep that summer on the Humboldt Forest obtain spring and fall range in the Elko Grazing District and winter on the Ely and Pyramid Grazing Districts. Some of these sheep also winter on the unregulated public domain.

Nevada National Forest

The cattle grazing season on the Nevada Forest is similar to that on the Humboldt. The sheep use on the Nevada starts earlier and the season ends earlier than on the Humboldt. Livestock that summer on the Nevada Forest use the Ely Grazing District and the unregulated public domain during the other seasons. Most of the cattle are fed hay during the winter and use the grazing district for spring range.

Toiyabe National Forest

Much of this forest lies at relatively low elevations and is far enough south to provide a long grazing season. There is some yearlong cattle use but most of the cattle grazing is from May through October. This is a longer season than for the other Nevada forests. Some sheep use the forest during the winter months, but most of the grazing is in the summer. The grazing on this forest is largely related to spring and fall and winter use of the unregulated public domain. However, the Santa Rosa Division located in northern Humboldt County, is used by livestock that graze on the Pyramid Grazing District.

Elko Grazing District

The cattle use on this district is distinctly spring and summer grazing. Some of the cattle that obtain spring range on the district go onto the Humboldt Forest in June. The use of the district declines as summer goes on because the beef are removed in August and September and the feed and stock water start to dry up. The cattle are put into pastures and hay meadows in the fall. Most of the cattle are fed hay during the winter months. The private range lands intermingled with the grazing district lands that are used by cattle are principally tracts of deeded range.

The sheep use of the Elko District reflects the type of operations followed by sheep operators in this area. The winter use is in the southeastern part of the district; some of it is by out-of-state sheep. The rapid increase in grazing during the spring represents use by the sheep as they move north from the winter ranges. During the summer the sheep are on the Humboldt Forest and private range at the higher elevations. After leaving the forest in the fall the sheep trail south and west to the Ely and Pyramid Grazing Districts and to the unregulated public domain. In contrast to the cattle operations, most of the private lands intermingled with the grazing district lands and used by sheep, are leased rather than deeded. These private lands are principally railroad land.

Pyramid Grazing District

The cattle use on this district (figure 42) is similar to the Elko District being principally spring and summer grazing. There is some winter grazing but most of the cattle are fed hay during the winter. In June some of the cattle go onto the Santa Rosa Division of the Toiyabe National Forest, but this use is not very large. In August and September the grazing district use declines as the beef are taken off and the range has started to dry up. In the fall the cattle are brought into the hay meadows and private pastures.

Sheep use of the Pyramid District is principally in the winter months. The private range lands intermingled with grazing district lands are railroad lands and deeded ranch property. Approximately 75,000 sheep from the western part of the district go over into California for summer range. Much of this is on private land. Sheep in the eastern part of the district move into the Elko Grazing District for spring, fall, and summer range on both private and grazing district land and others secure summer range on the Humboldt Forest. There is a high degree of use-relationship between the Elko, Pyramid, and Ely Grazing Districts for sheep production.

Virginia City Grazing District

Figure 44 shows the cattle use on the Virginia City Grazing District. No one season of use predominates in this district. There is a slight increase in the spring and some decrease during the summer when part of the cattle go onto summer range on the national forests and private lands in California near the Nevada line. The sheep use (figure 45) is largely during the winter months. After the spring use the sheep move onto the summer ranges which are located principally in California. About 100,000 Nevada sheep summer on the Mono and Inyo Forests.

Ely Grazing District

Spring is the most important season of use by cattle on the Ely Grazing District. In June some of the cattle go onto the Nevada Forest. Use by cattle is similar to the Elko, Pyramid, and Virginia City Districts, but there is more use during the winter. This is because the district lies farther south. However, many of the cattle in the area are wintered on hay. The small amount of private land used in connection with the grazing district land is principally water holes and the better range lands lying along the streams where they control the water.

The sheep use is predominately winter grazing. Most of this is by sheep that trail in from the north. The summer sheep grazing is on the higher lands by resident sheep. The sheep use of this district is closely related to the use of the Elko Grazing District and the Humboldt and Nevada National Forests.

Searchlight Grazing District

The cattle use on this district is principally yearlong grazing. A few cattle, mostly the weaker livestock, are wintered on private land and harvested feed. The sheep use (figure 49) is almost entirely in the spring. This use is by sheep that come in from outside the district. The Searchlight District is not very important for livestock production compared with the other Nevada districts.

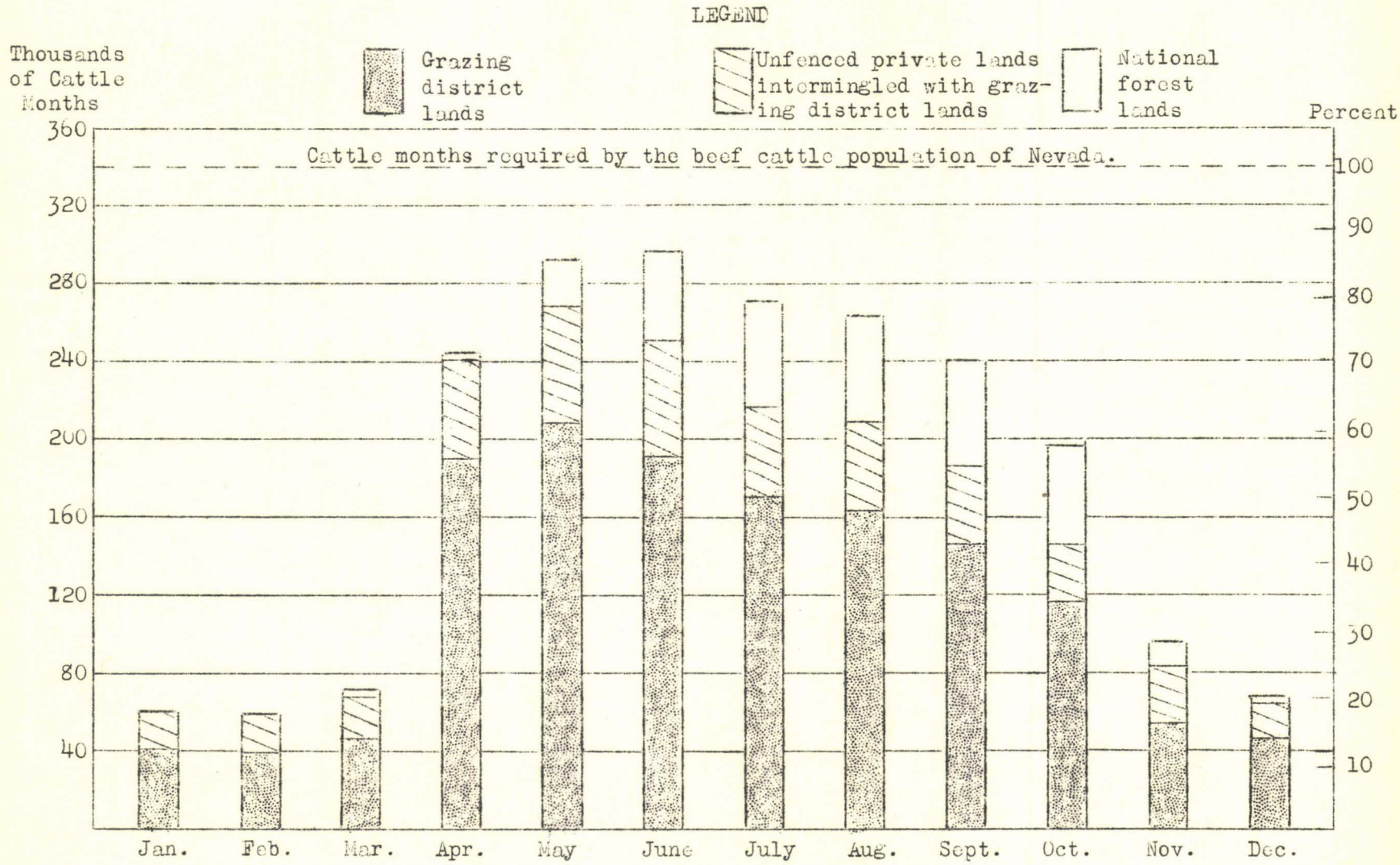

Figure 32.- Cattle months required by the beef cattle population of Nevada and the amounts furnished by the different kinds of land* during each month, 1939-1940.

*Does not include grazing on unregulated public domain lands nor on national forests in California.

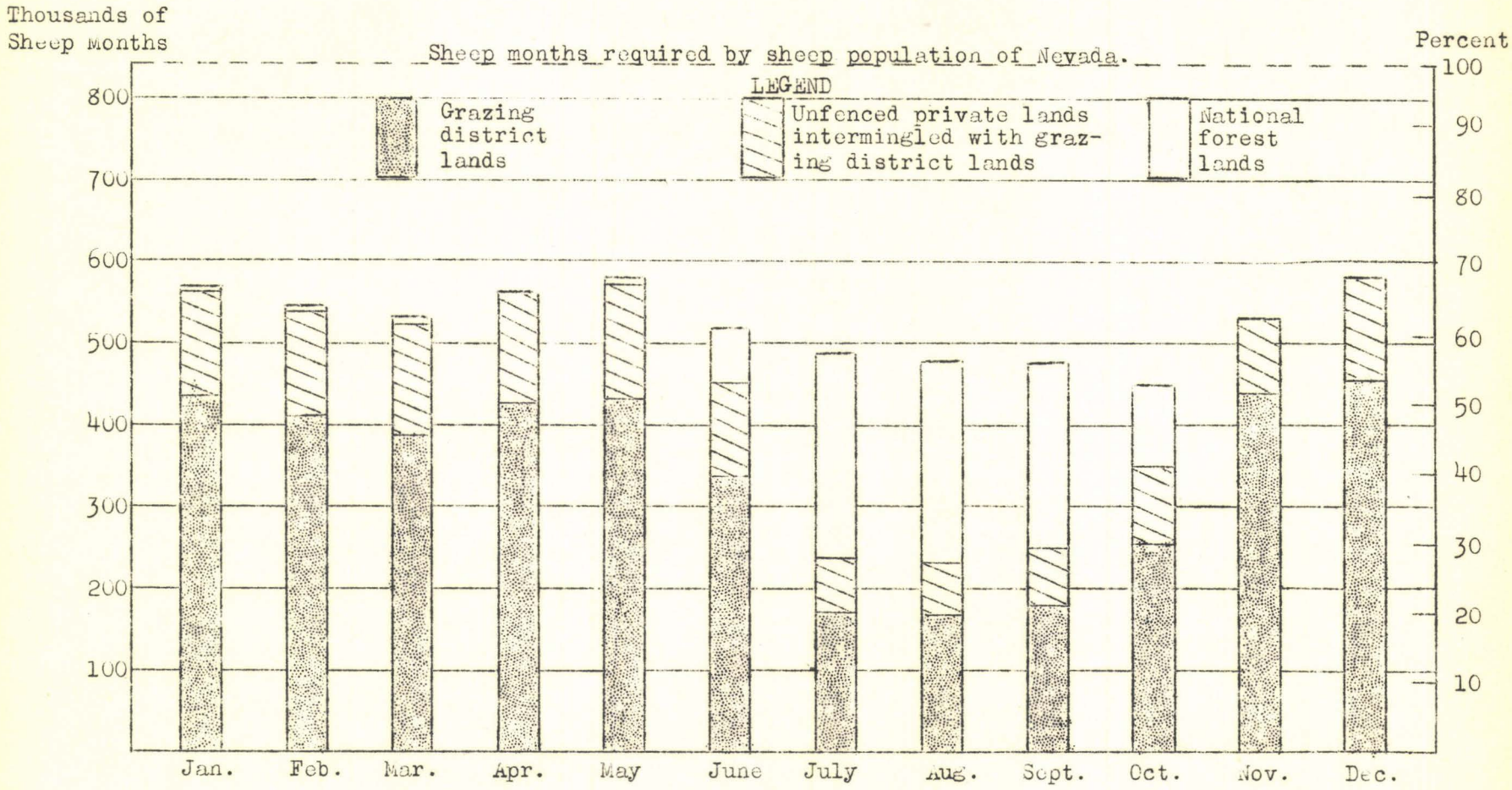

Figure 33.- Sheep months required by the sheep population of Nevada and the amounts furnished by the different kinds of land* during each month, 1939-1940.

*Does not include grazing on unregulated public domain land nor on national forests in California.

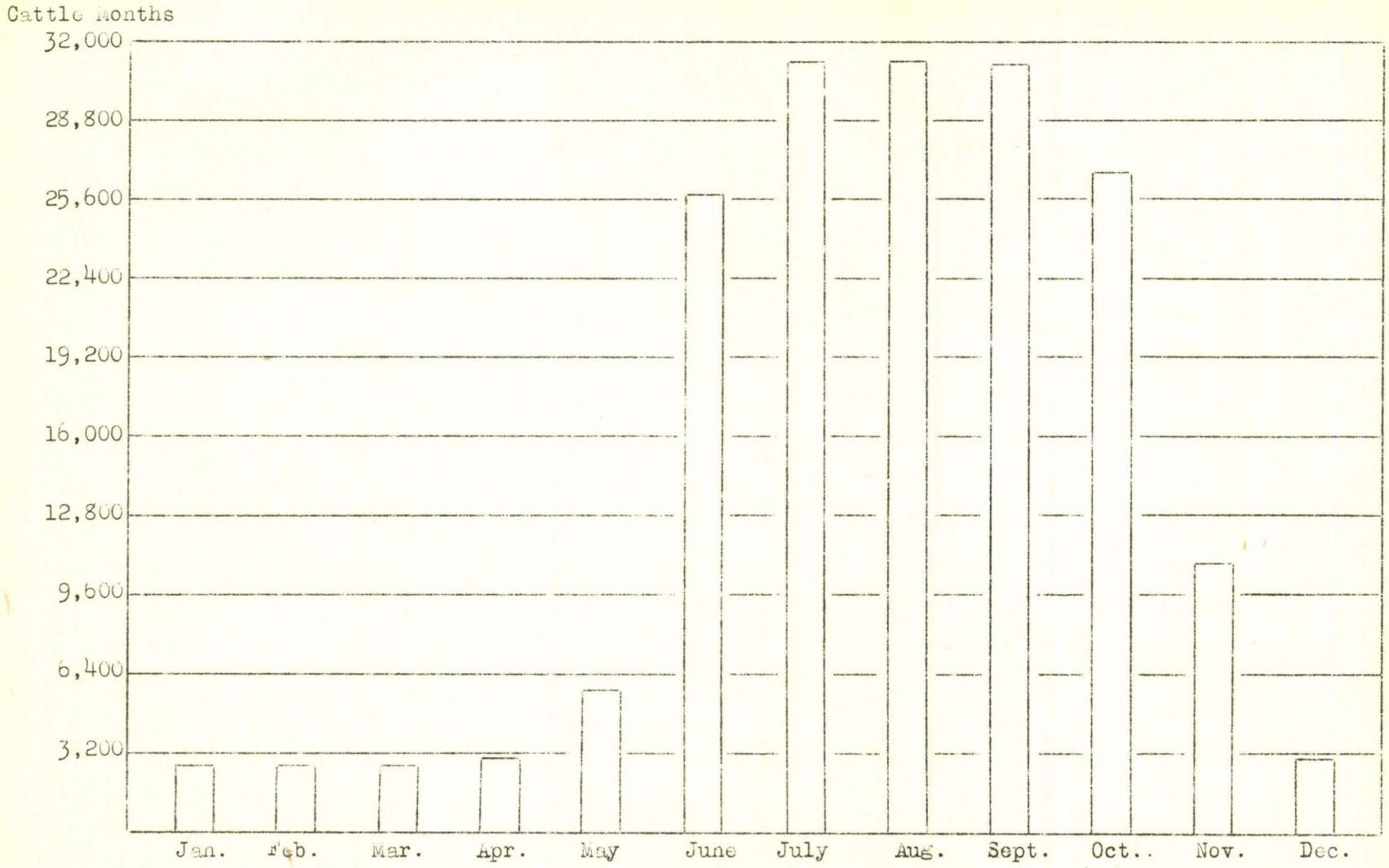

Figure 34.- Months of permitted use for cattle permitted to graze on the Humboldt National Forest during each month, 1939.

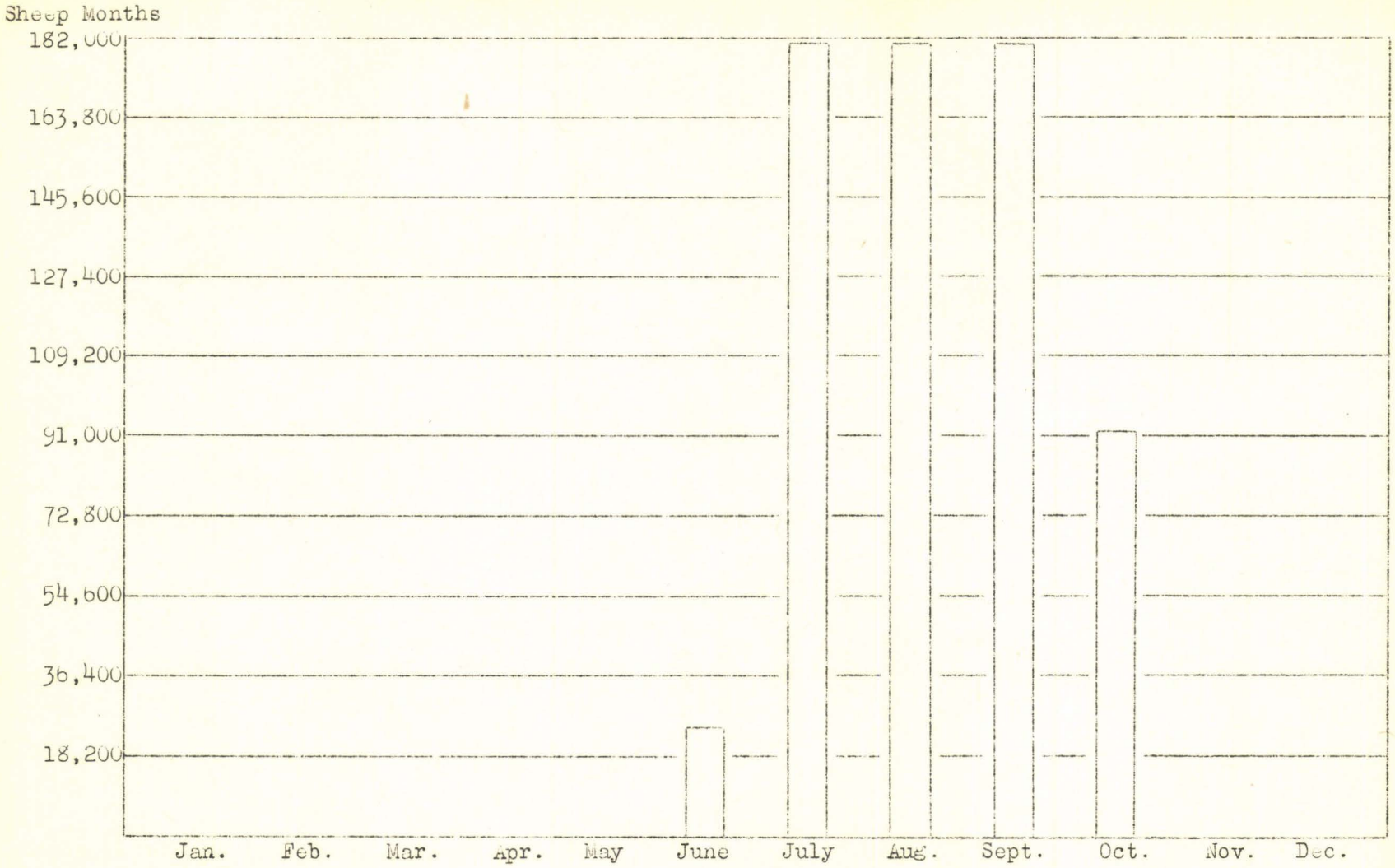

Figure 35.- Months of permitted use for sheep permitted to graze on the Humboldt National Forest during each month, 1939.

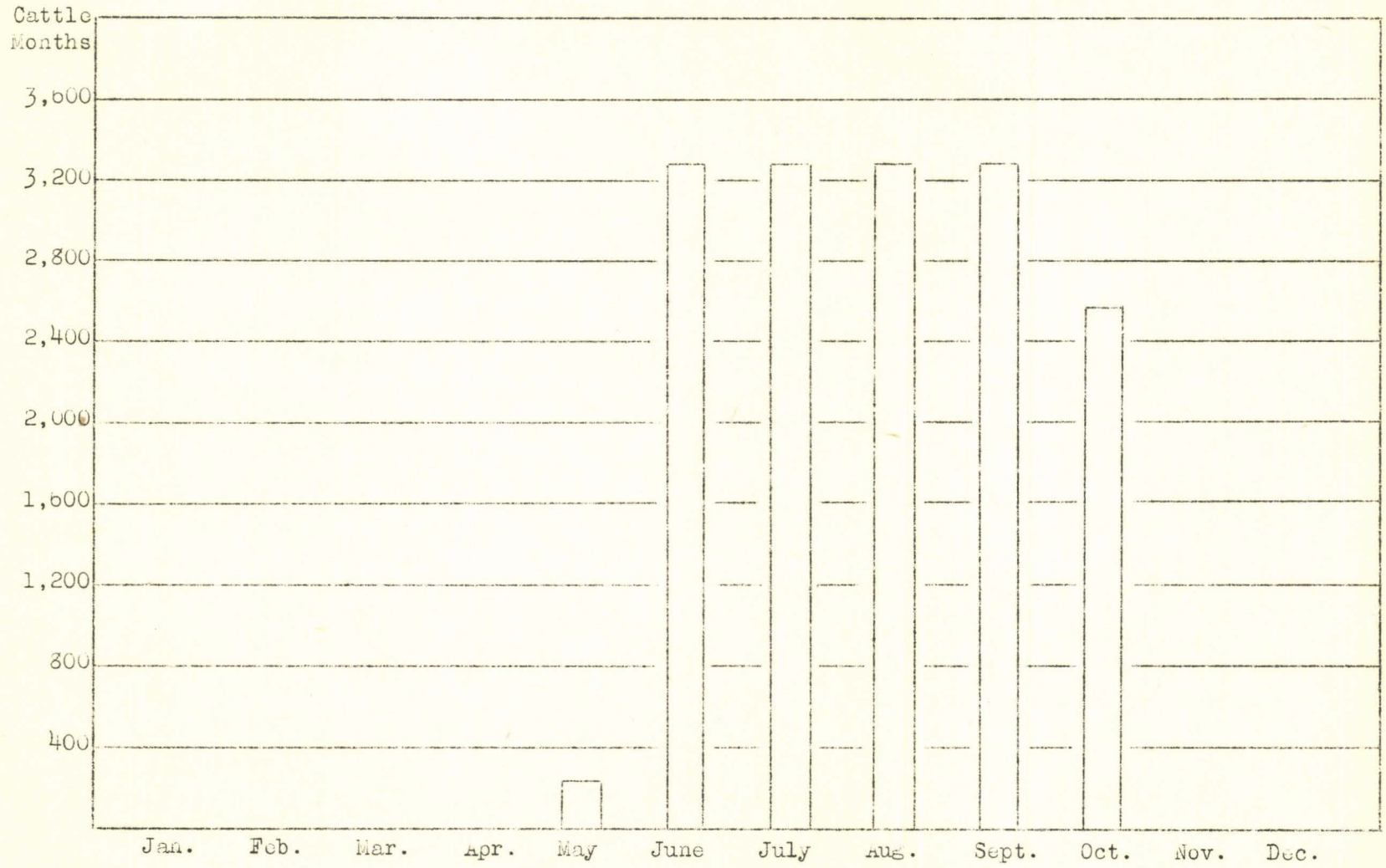

Figure 36.- Months of permitted use for cattle permitted to graze on the Nevada National Forest during each month, 1939.

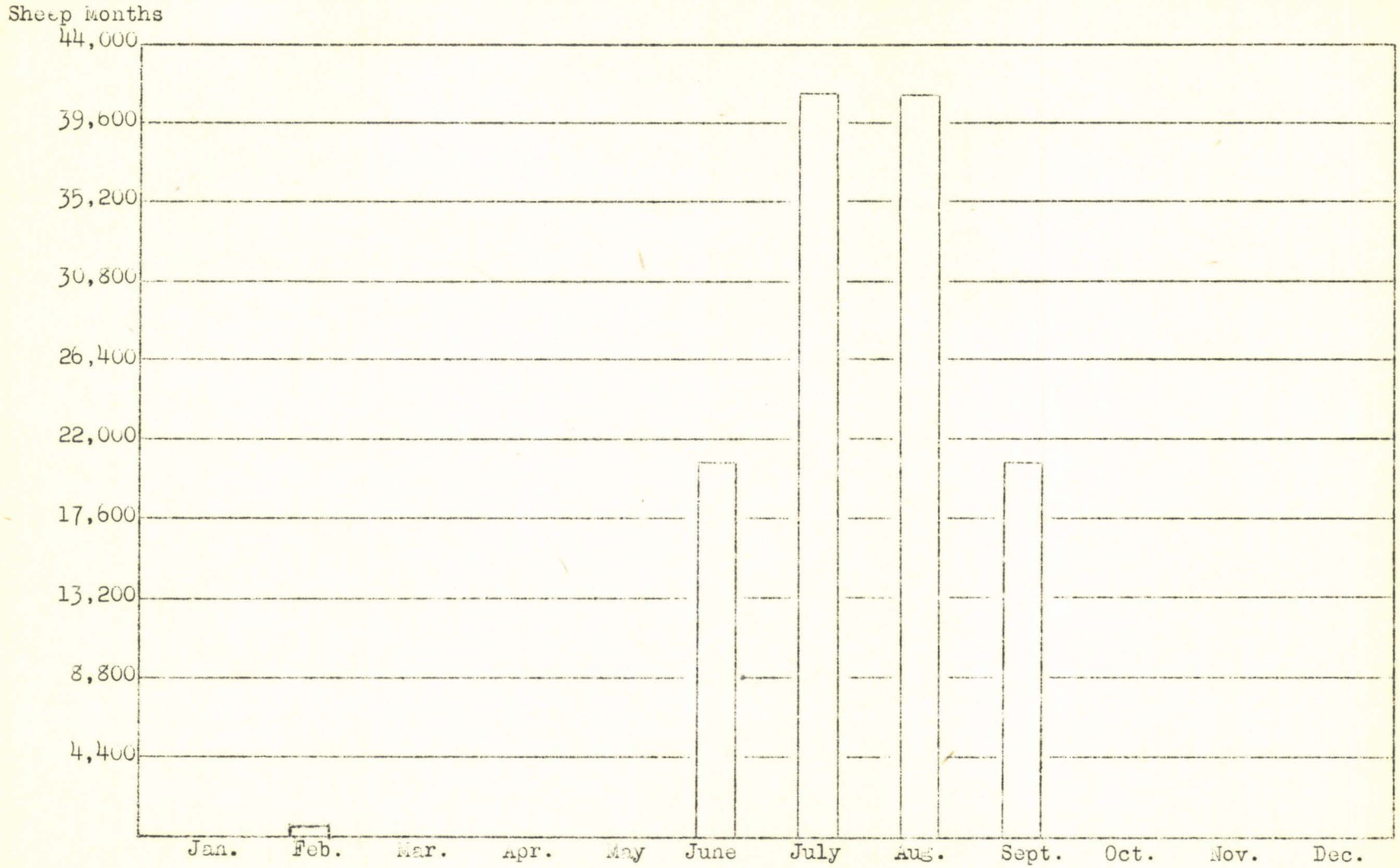

Figure 37.- Months of permitted use for sheep permitted to graze on the Nevada National Forest during each month, 1939.

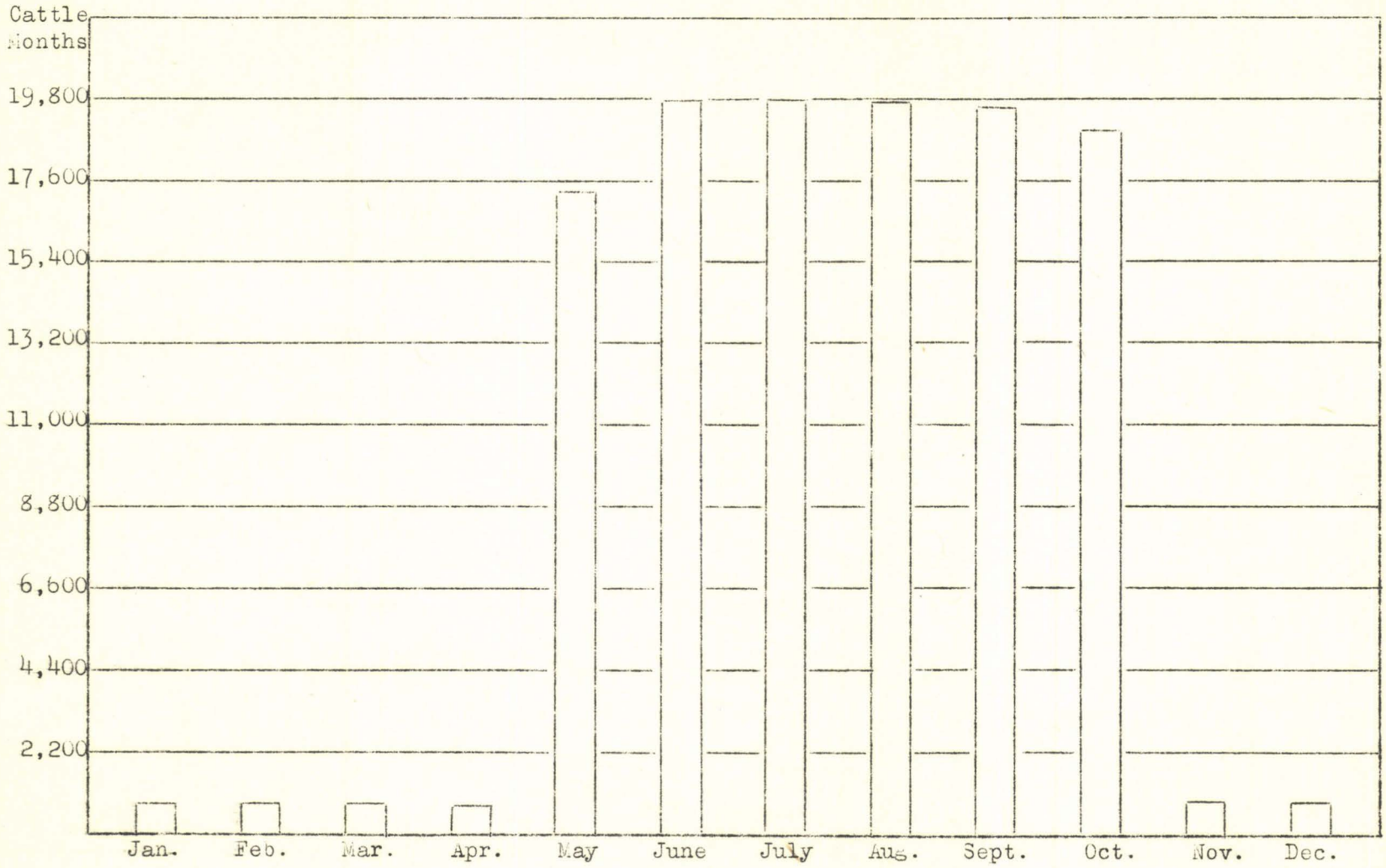

Figure 38.- Months of permitted use for cattle permitted to graze on the Toiyabe National Forest during each month, 1939.

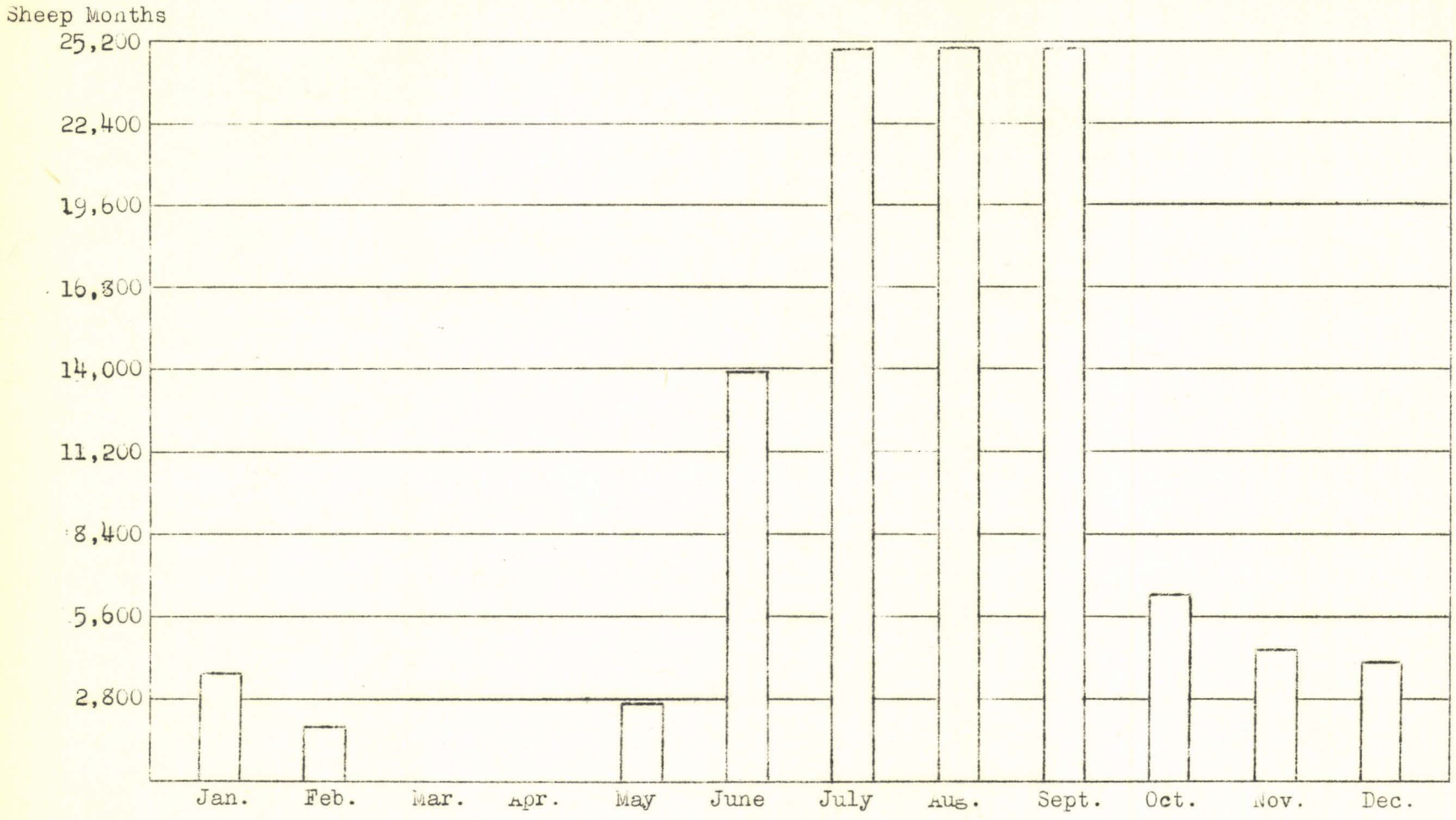

Figure 39.- Months of permitted use for sheep permitted to graze on the Toiyabe National Forest during each month, 1939.

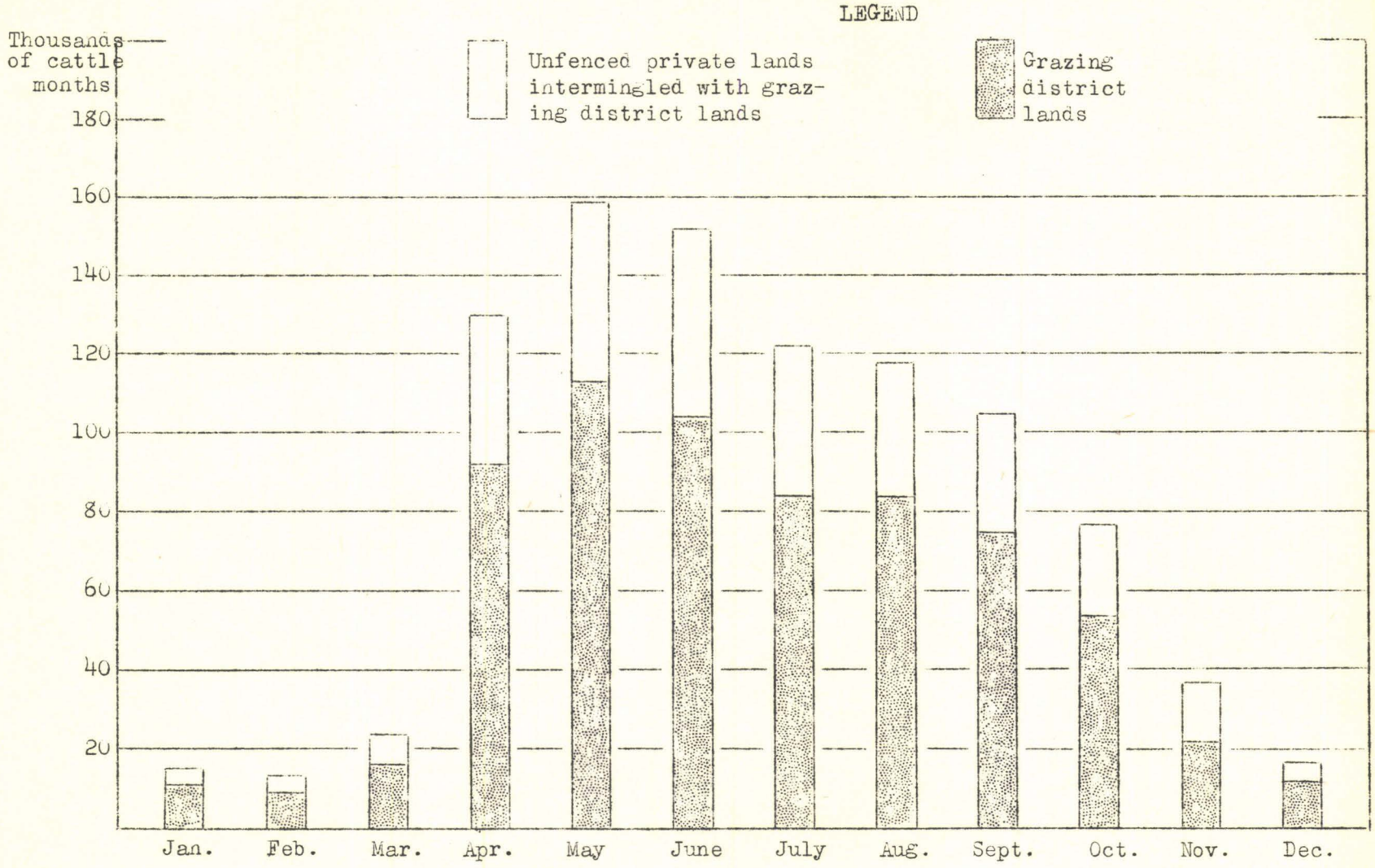

Figure 40.- Months of permitted use for cattle licensed to graze on the Elko Grazing District during each month, 1939-1940.

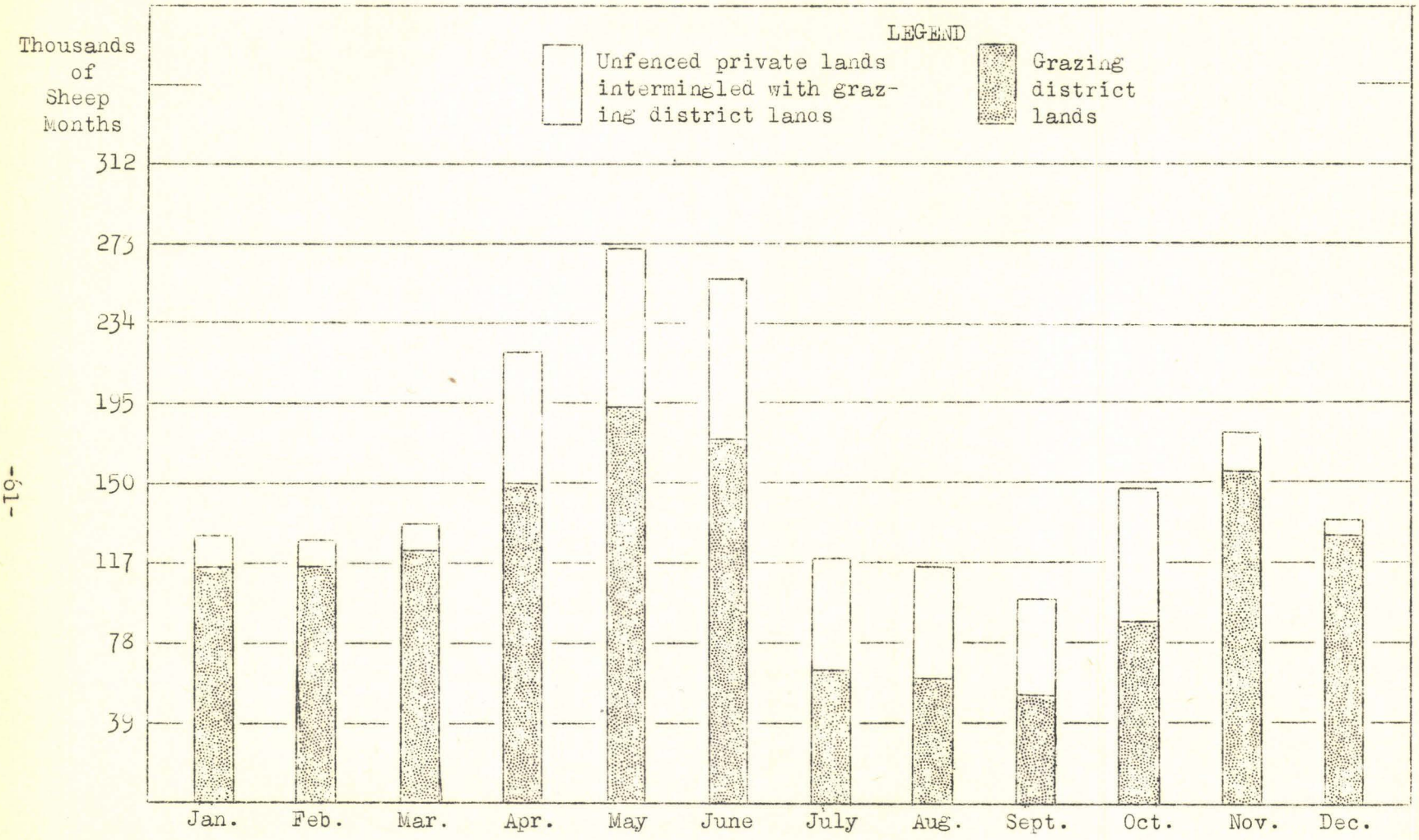

Figure 41.- Months of permitted use for sheep licensed to graze on the Elko Grazing District during each month, 1939-1940.

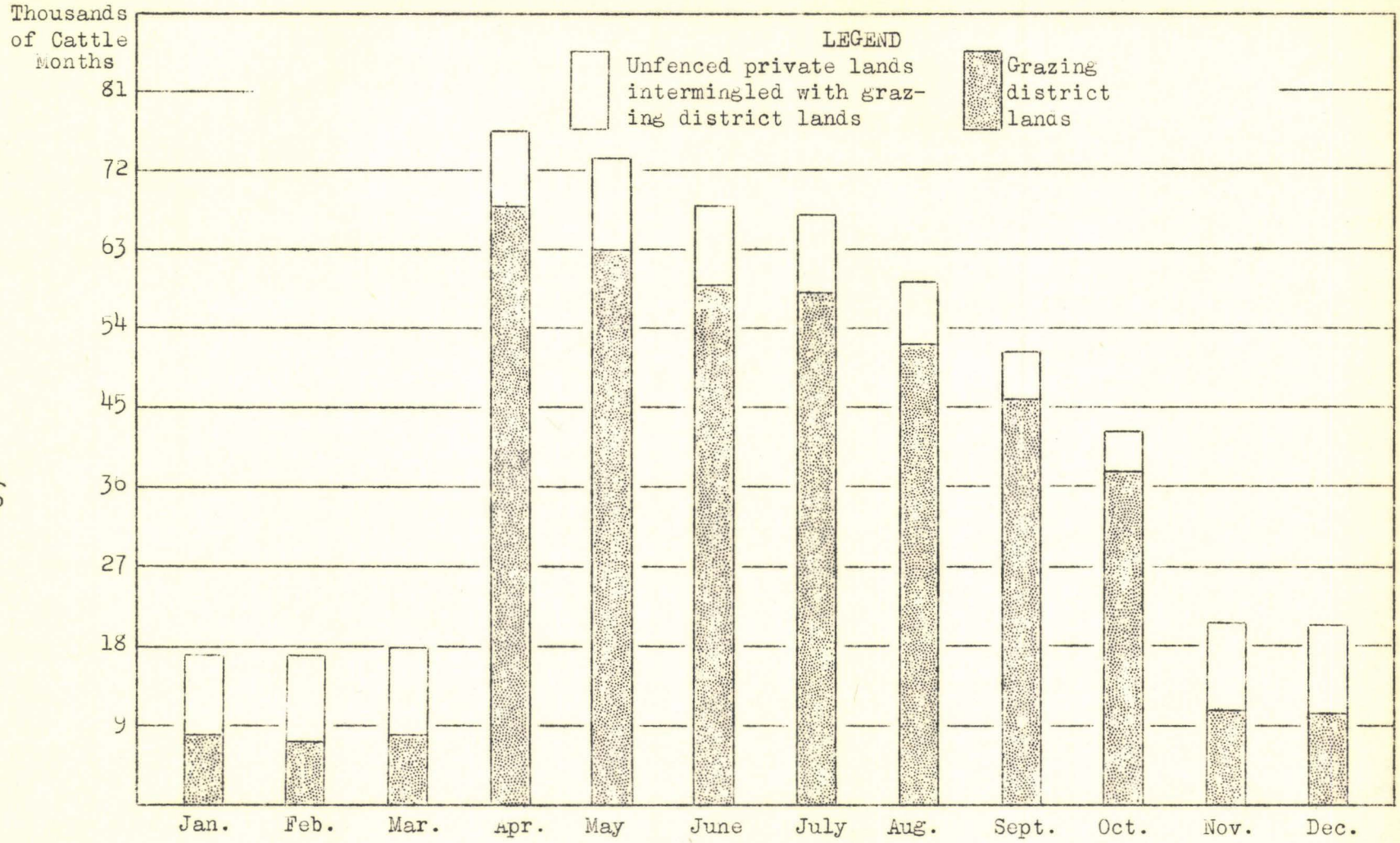

Figure 42.- Months of permitted use for cattle licensed to graze on the Pyramid Grazing District during each month, 1939-1940.

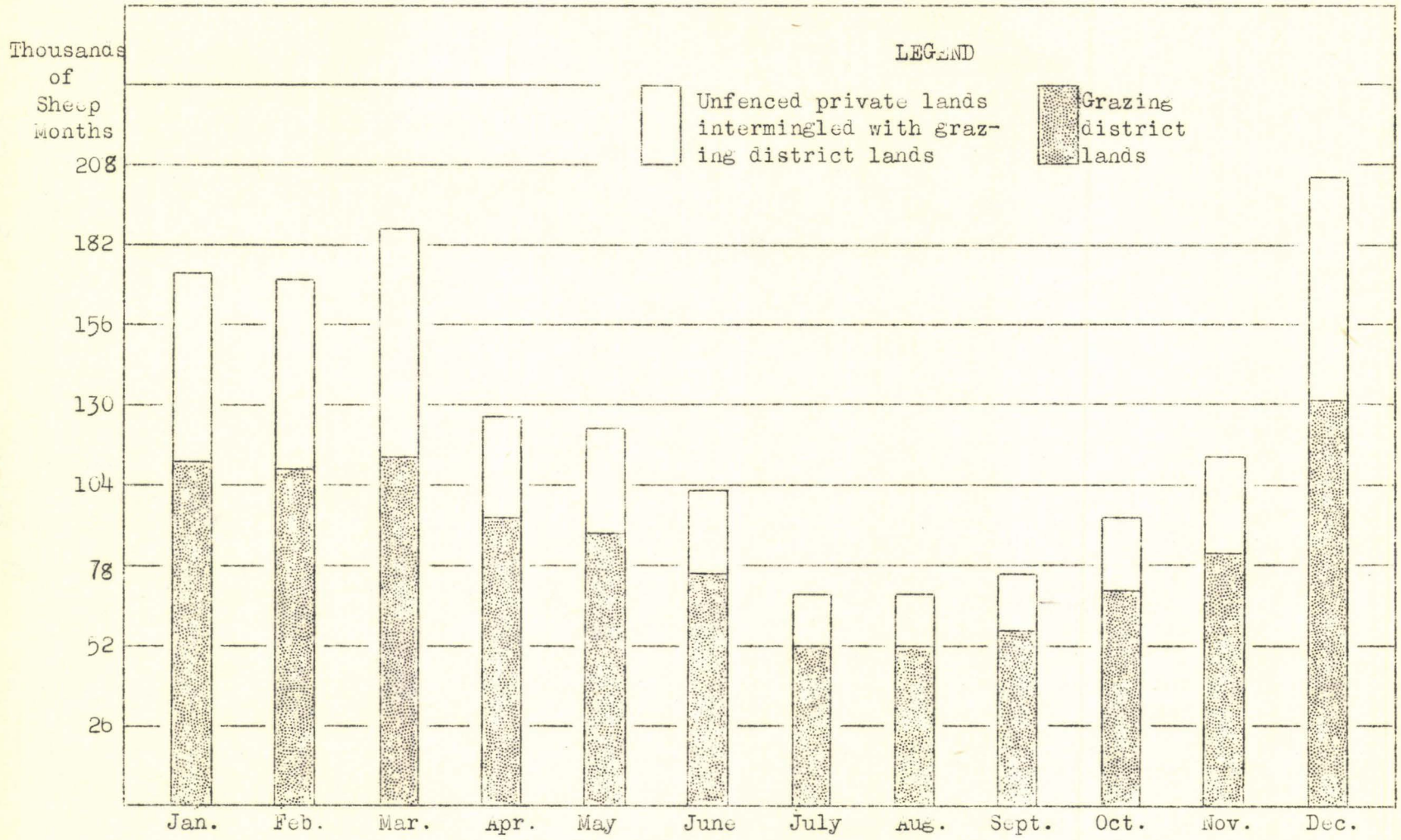

Figure 43.- Months of permitted use for sheep licensed to graze on the Pyramid Grazing District during each month, 1939-1940.

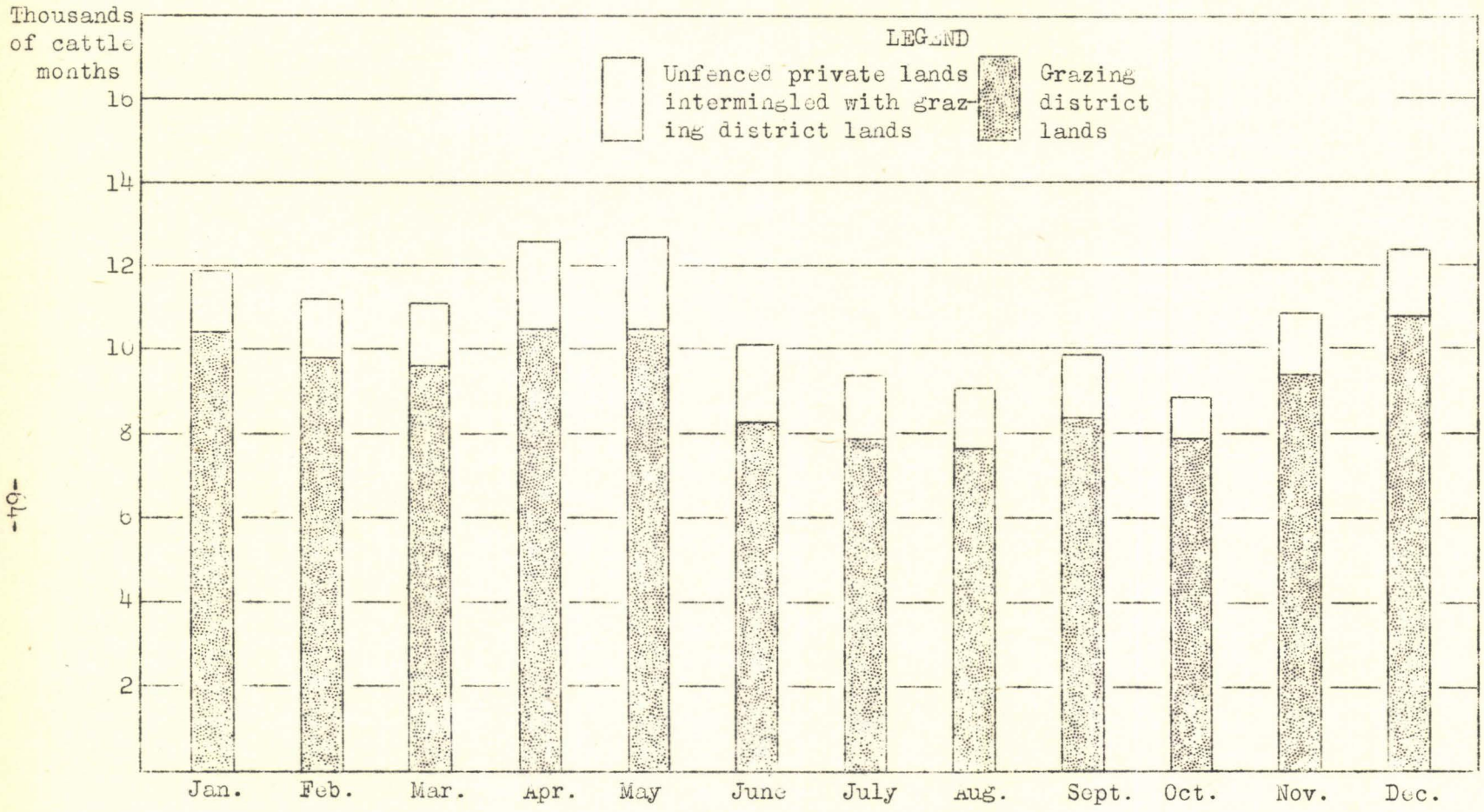

Figure 44.- Months of permitted use for cattle licensed to graze on the Virginia City Grazing District during each month, 1939-1940.

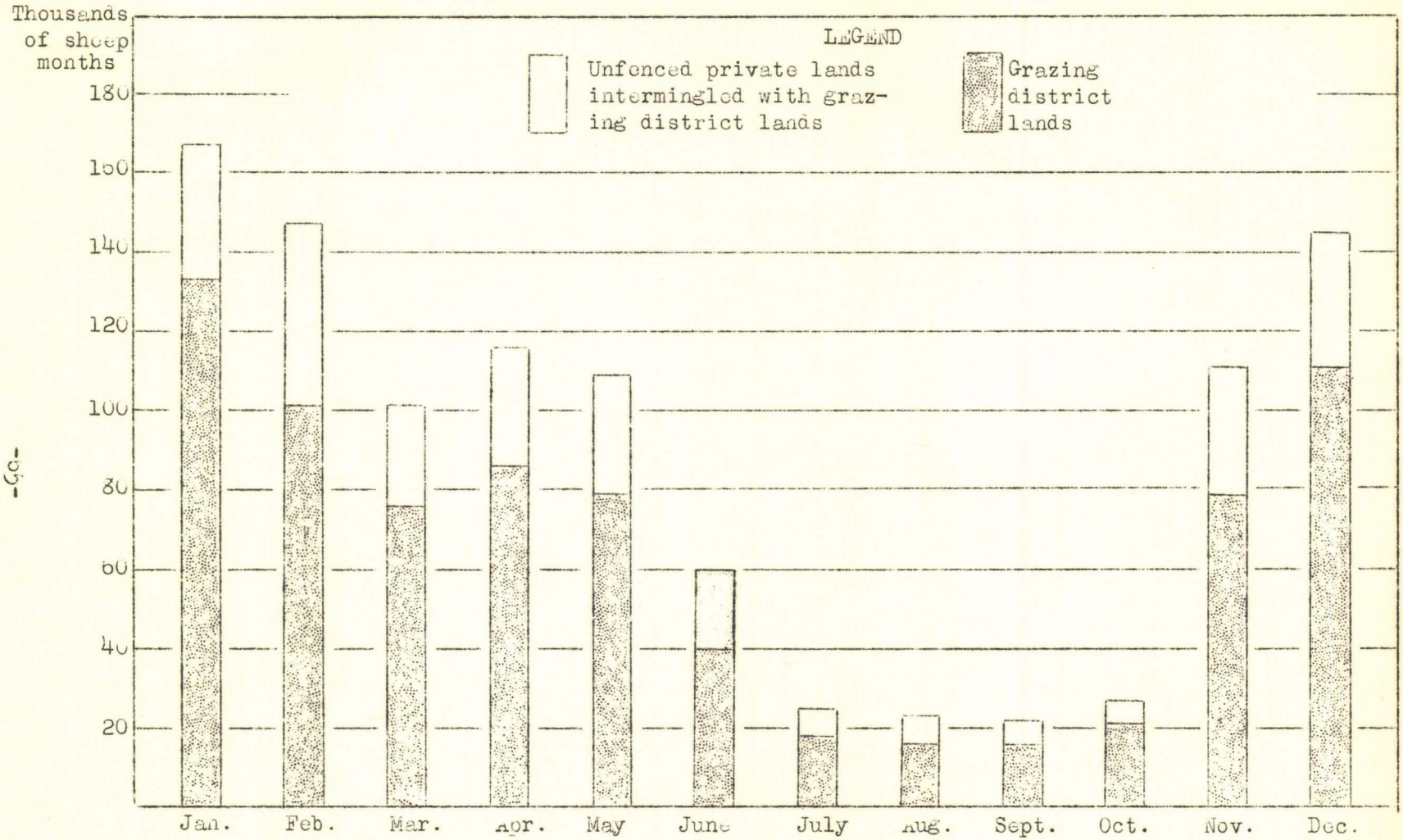

Figure 45.- Months of permitted use for sheep licensed to graze on the Virginia City Grazing District during each month, 1939-1940.

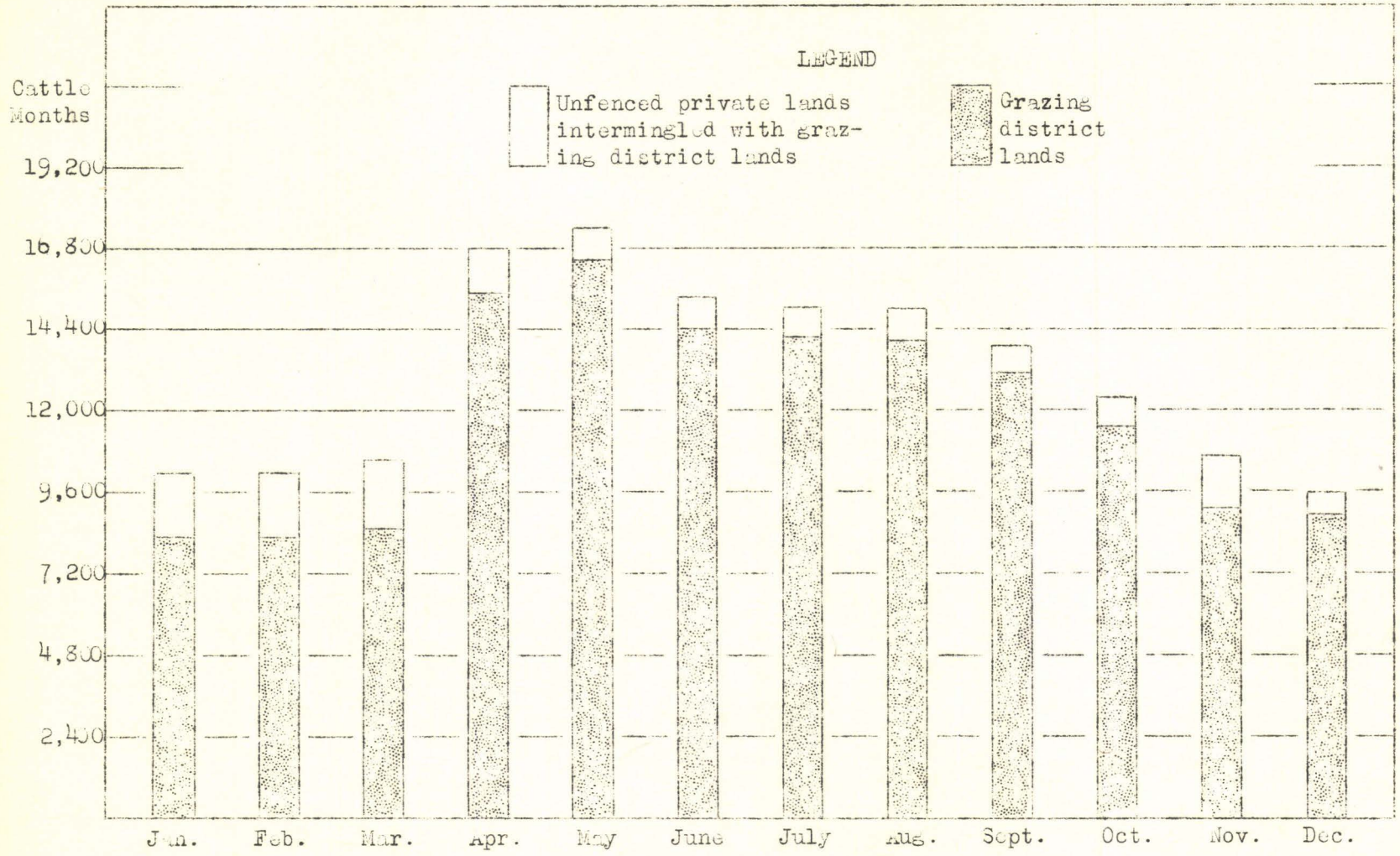

Figure 46.- Months of permitted use for cattle licensed to graze on the Ely Grazing District during each month, 1939-1940.

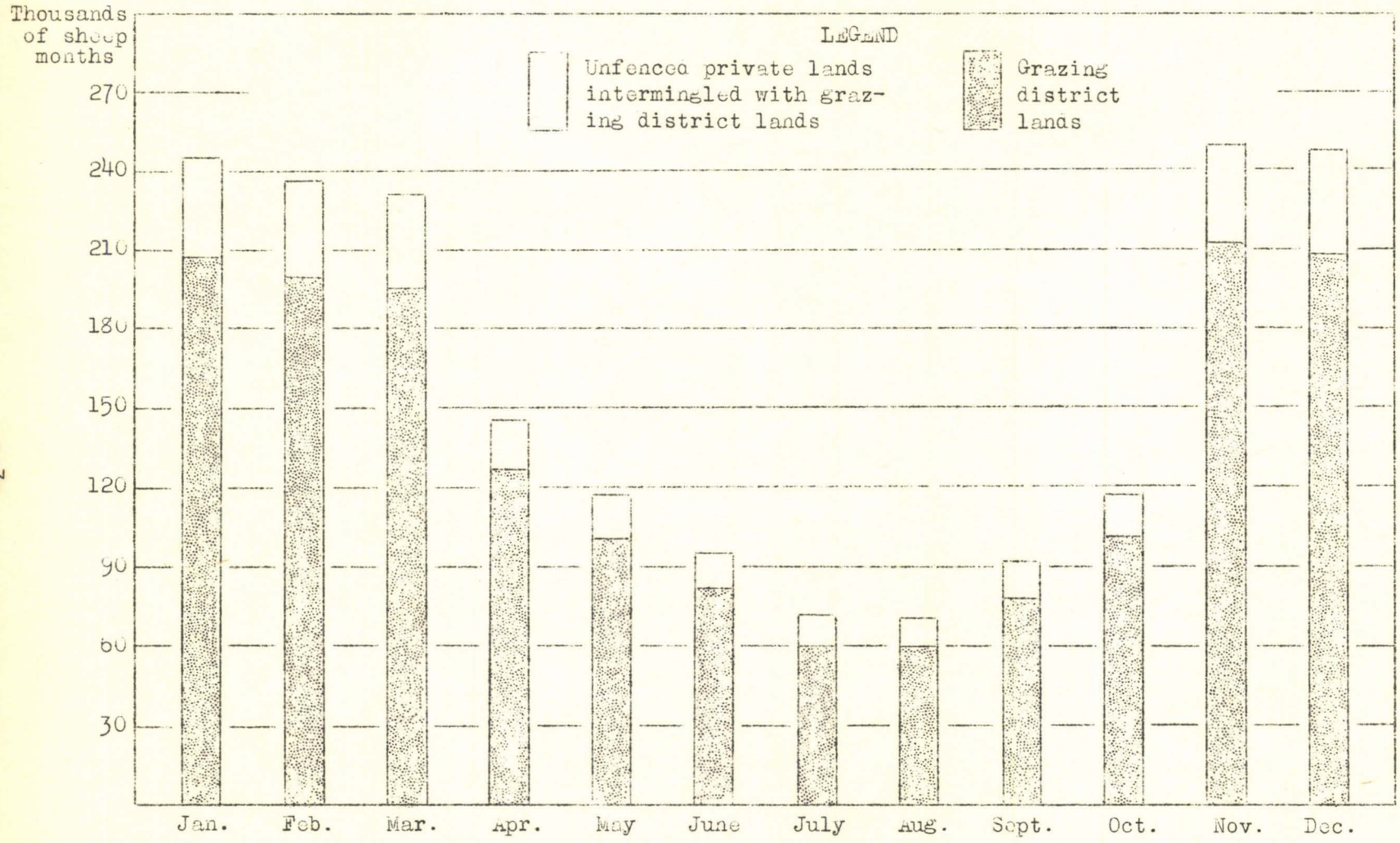

Figure 47.- Months of permitted use for sheep licensed to graze on the Ely Grazing District during each month, 1939-1940.

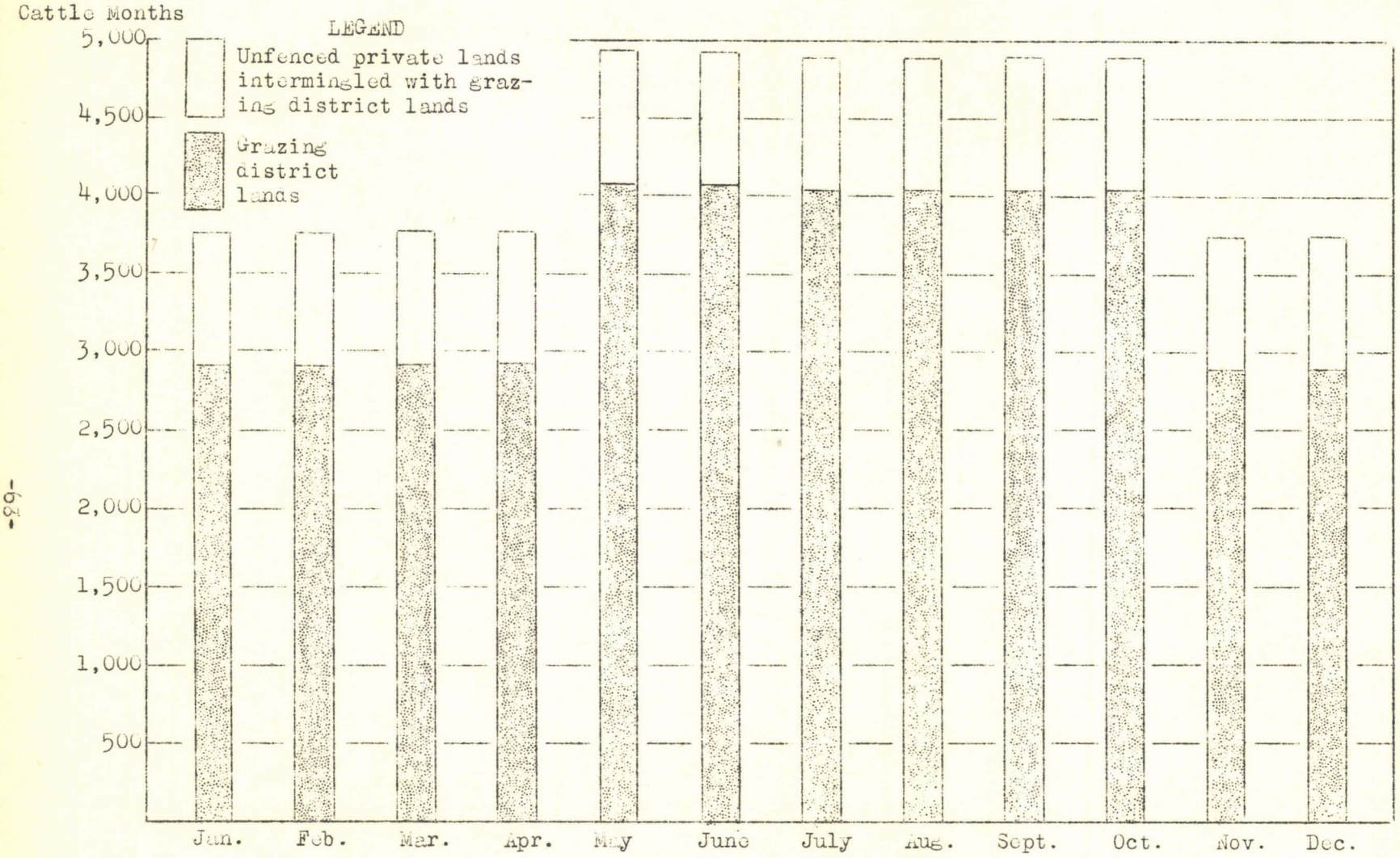

Figure 48.- Months of permitted use for cattle licensed to graze on the Searchlight Grazing District during each month, 1939-1940.

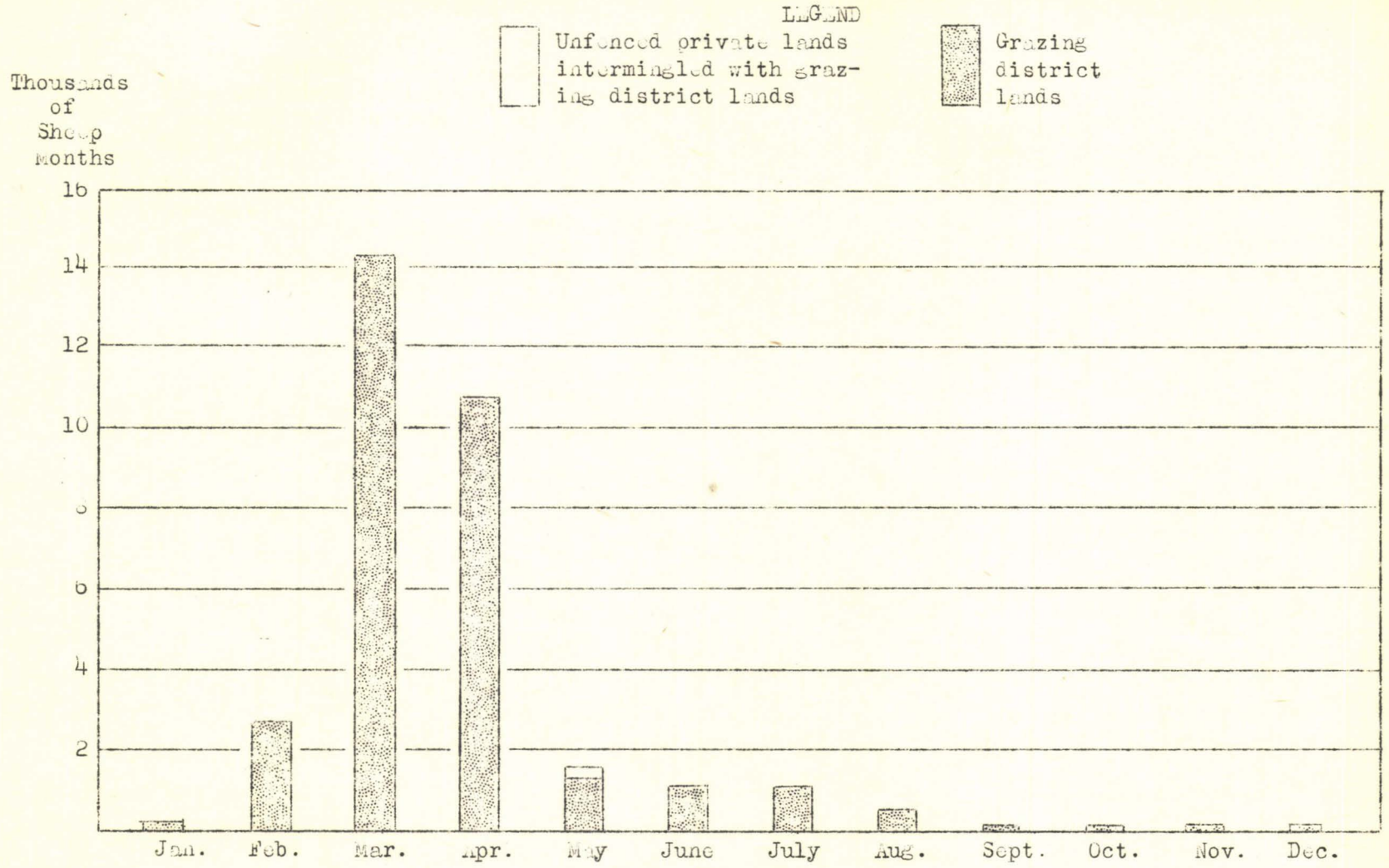

Figure 49.- Months of permitted use for sheep licensed to graze on the Searchlight Grazing District during each month, 1939-1940.

UTAH

The national forests and grazing district lands of Utah provide approximately 50 percent of the annual feed required by the sheep population of the state and about 40 percent for the cattle population. The seasonal distribution of this use of the national forests and grazing districts is shown in figures 50 and 51. Cattle use of the public lands in Utah is principally during the summer months, when these lands provide about 60 percent of the range required. It will be noted from figure 50 that cattle use of the desert and semidesert grazing district ranges in the summer is about 30 percent of the total.

There is not the high degree of seasonal use association between the national forests and grazing district ranges for cattle that there is for sheep. One reason for this is because the majority of the cattle permittees on national forests in Utah have small farm herds which do not make much use of the grazing district ranges in the winter, but are generally wintered on supplemental feeds on the farms.

The availability of winter range on the deserts and the limited hay production of the irrigated valleys cause most Utah sheep operations to be organized on a basis of range lambing and production of feeder lambs. About 70 percent of present Utah sheep numbers are wintered on the grazing district ranges. From the winter ranges the sheep are trailed to spring range which is largely in private ownership. Over 50 percent of the summer sheep forage is secured from privately owned summer sheep range located at the lower and intermediate elevations of the Wasatch highlands in the central and northeastern parts of the state.

There are about 170,000 sheep that move into western Colorado for summer range.[10/] These sheep come from the Monticello, San Raphael, Duchesne, and Grand Districts; about 100,000 from the Monticello District. The great majority of these sheep summer on private range at the higher elevations while approximately 20 percent secure summer range on the western Colorado national forests. Although the seasonal use of the different kinds of range land is not as distinct in Utah as in Idaho, there still exists the same close relationship between the public ranges and privately owned lands. In Utah these private lands are both range and crop land whereas in Idaho they are principally crop land.

Ashley National Forest

There is a small amount of winter use by cattle at the lower elevations of the Ashley Forest (figure 52), but most of the grazing is during the summer months. In cattle production the livestock to be marketed are rounded up and moved off the forest in early fall while the breeding stock and other cattle generally remain until the end of the grazing season. As is true of most of the national forests of this region, the sheep graze at the higher elevations and hence the season is shorter than for cattle (figure 53).

Cache National Forest

Figure 54 shows there is some May use by cattle on the Cache Forest. This demand for early range is by Cache Valley dairy farmers who must get their replacement heifers and dry livestock off their farms during the farming season. Much of the cattle use on this forest is by small farm operators, many of whom only run dairy livestock and whose

10/ Whether these are Utah or Colorado owned sheep is not definitely known. However, they spend at least one-half the year in Utah and so have been considered Utah sheep.

forest permits are filled by dry and growing dairy livestock. The short season for sheep reflects the use of high summer range. Most of the range bands that summer on this forest move to the Utah west desert and eastern Nevada grazing districts for winter range.

Dixie National Forest

Figure 56, cattle use on the Dixie Forest, shows some year-round use. This is in the area around St. George which is lower than other parts of the forest. Grazing on the Dixie Forest is closely related to the use of the Virgin Grazing District. In addition, some livestock use the Pahvant and Escalante Districts for spring, fall, and winter range.

Fishlake National Forest

Note the spring use on the Fishlake Forest by both cattle and sheep, (figures 58 and 59). This use is on the lower range, some of which must be used early to take advantage of spring run-off for stock water. The May and June sheep use is principally by sheep that lamb on the forest. Many of the sheep that summer on the Fishlake Forest have spring and fall range near the forest on private land and winter on the Pahvant Grazing District. Some cattle also winter on the Pahvant and San Raphael Districts.

LaSal National Forest

The cattle use on the LaSal Forest is almost all summer grazing. The season for sheep is somewhat earlier than for other forests, since most of the sheep are on the forest in June. The cattle and sheep use on the LaSal is closely associated with the Monticello and Grand Grazing Districts.[11/] Most of these operations are on a yearlong range basis.

11/ The Grand and Monticello Grazing Districts were formerly one district.

Manti National Forest

The cattle use of the Manti Forest as shown in figure 62 is similar to that on the Fishlake, but does not start as early in the spring. The May cattle use on the Manti is confined largely to the eastern side of the forest. There is some use association for cattle production between this part of the Manti Forest and the San Raphael Grazing District. Most of the cattle using this forest are from small farm herds and are generally wintered on the farms on hay. The May sheep use is principally lambing permits. Many of the sheep that summer on the Manti Forest trail out to the Pahvant Grazing District for winter range.

Powell National Forest

The summer grazing on the Powell Forest (see figures 64 and 65) is associated with the winter and spring and fall use of the Escalante Grazing District and to some extent with the Virgin District. The May cattle use and May and June sheep use are on the lower ranges of the Powell near Escalante. Note how the grazing use of the Powell Forest and the Escalante Grazing District complement one another.

Uinta National Forest

Figures 66 and 67 present the seasonal use picture of the Uinta Forest. There is a very small amount of yearlong cattle use on low range in the Uinta Basin. This low range accounts for some of the May cattle use and early sheep use. Most of the sheep that summer on the Uinta Forest go to the east and west desert grazing districts for winter range. Some spring and fall range is secured from privately owned and Indian lands in the Uinta Basin.

Wasatch National Forest

The distinct summer season of use on the Wasatch Forest for both cattle and sheep reflects the use of high range that occurs on most of the forest. The sheep use is generally related to winter grazing on the west desert grazing districts.

Promontory Grazing District

Figures 70 and 71 show the cattle and sheep use on the Promontory Grazing District. Much of the private land intermingled with grazing district land is railroad land. The eastern part of this district is higher and more mountainous than the western part and the season of use in the former is principally summer, while the latter is more winter use. Cattle use the district at all seasons of the year as do sheep, but in most cases the areas used are different as mentioned above.

Bonneville Grazing District

Note the much largeramount of unfenced private land used by cattle operations than that used by sheep (figures 72 and 73). Sheep use the district only during the winter, except for a very few farm flocks. Most of the sheep trail in from areas to the east and northeast where they have summered on the national forests and private range lands. There is a large trail movement through this district by sheep going to winter range to the west and south.

Pahvant Grazing District

The cattle use in this district occurs throughout the year with somewhat more use during the spring. This is not necessarily year-round use by same cattle since in many instances different cattle use

the range at different periods of the year. The sheep use is similar to that of the Bonneville District, being almost entirely winter use. The small amount of summer use is by cooperative bands of farm flock sheep around Delta. The sheep that winter in the Pahvant District summer on the national forests and privately owned summer ranges to the north and east. Such distinct seasonal use as is shown by figures 73 and 75 is evidence of the interrelationship of the different public ranges and the private lands.

Virgin Grazing District

The seasonal cattle use in this district (figure 76) is characterized by three types of operation in different parts of the district. The southeastern portion of the district is largely summer use, the southwestern part spring and fall and winter use, while the northwestern part is used mainly for year-round grazing by cattle. The sheep use of the Virgin District is not as completely winter as is that in the Bonneville and Pahvant Districts. Part of the sheep that summer in the area winter in the "Arizona strip" while others winter in Nevada. Some of this Nevada use is on unregulated public domain. The summer use is on the Dixie and Powell Forests and on privately owned range at the higher elevations.

Escalante Grazing District

Figures 78 and 79, showing the cattle and sheep use in the Escalante Grazing District indicate that very little private land is used with the grazing district lands. The amount of commensurate property in this district is relatively small, and the grazing district and the Powell Forest support most of the livestock in the area throughout the year. The summer cattle and sheep use on the grazing districts is in the Henry and Parker Mountains which rise to fairly high elevations.

Monticello and Grand Grazing Districts[12/]

The cattle use of these districts is mainly in the winter and spring and fall months. These cattle graze on the LaSal Forest and on private range near the forest in the summer. Most of the cattle operations in the area are on a yearlong range basis. The sheep use (figure 81) is during the winter. The LaSal and some of the western Colorado national forests provide summer range for these sheep. Some of these sheep also use private summer range in western Colorado.

San Raphael Grazing District

Figures 82 and 83 show the cattle and sheep use during each month on the San Raphael District. The majority of the cattle use is during the winter months. The year-round cattle use is in the more remote parts of the district. Some of the cattle that winter in the district are summered on the Fishlake and Manti Forests. The private land intermingled with the grazing district land is used as summer range and is the more productive land. These private lands are frequently under annual lease and the shifting of leases from one operator to another creates a difficult management problem. This situation is more true for sheep than cattle. The sheep use of the district is distinctly winter grazing. The small amount of summer use is confined largely to the northern part of the district at the higher elevations where there is a large amount of private range. There is an appreciable movement of sheep into the San Raphael District for winter grazing, some sheep coming in by rail from western Colorado.

12/ The Grand and Monticello Grazing Districts were formerly one district.

Duchesne Grazing District

The seasonal cattle use of the Duchesne Grazing District is shown by figure 84. This graph indicates that there is no distinct season of use by cattle but rather that the district is used throughout the year. This is because different areas within the district are used at different seasons of the year. Some cattle use the Book Cliffs, Diamond Mountains, and other high country in the summer. Other parts of the district are used for winter range by different cattle. There is only a small amount of yearlong use by cattle. The sheep use is mainly during the winter months as is shown by figure 85. Many of these sheep operators control private land in the Uinta Basin that is used for spring, fall, and summer range.

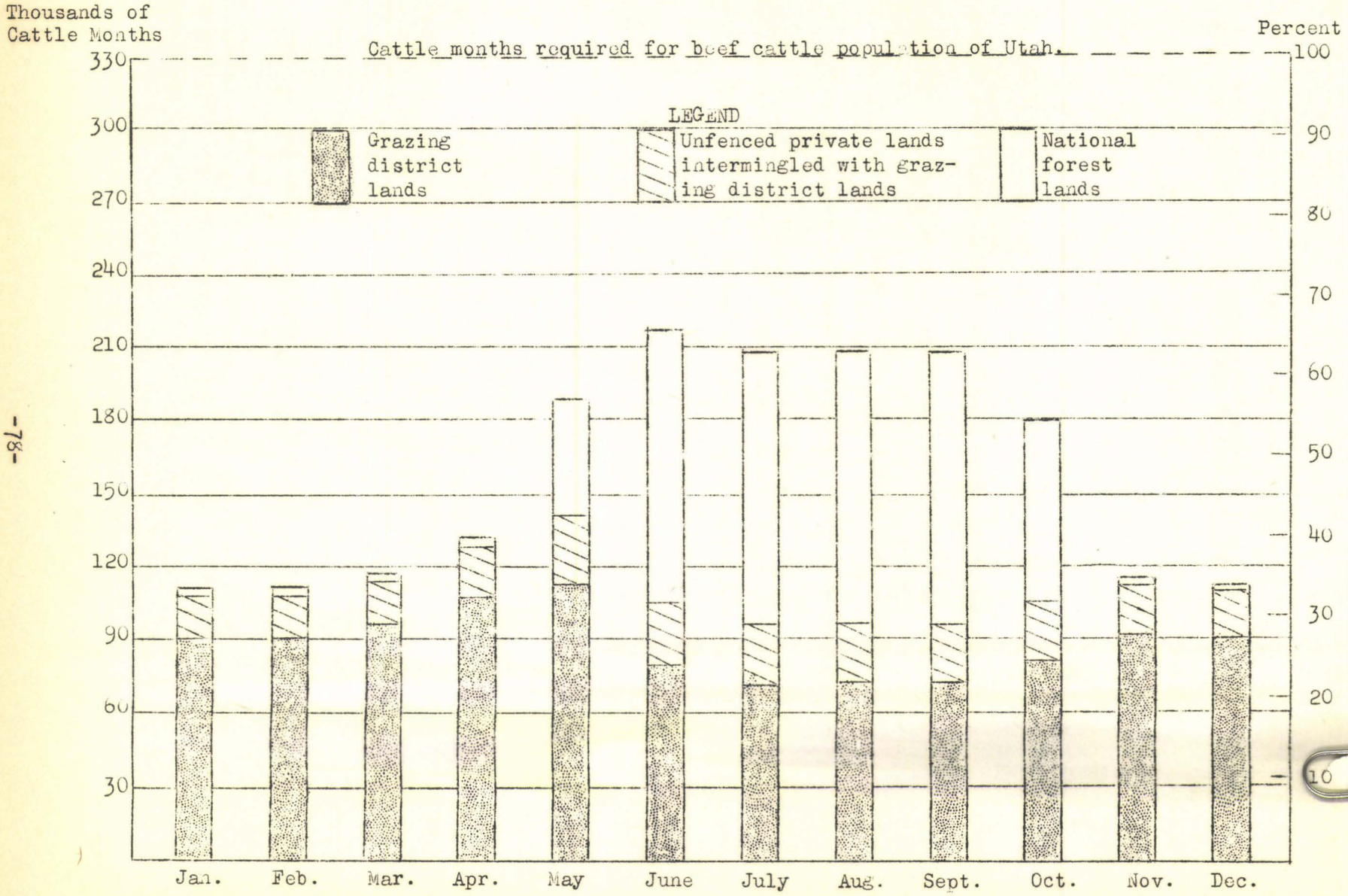

Figure 50.- Cattle months required by the beef cattle population of Utah and the amounts furnished by the different kinds of land during each month, 1939-1940.

Figure 51.- Sheep months required for the sheep population of Utah and the amounts furnished by the different kinds of land during each month, 1939-1940.

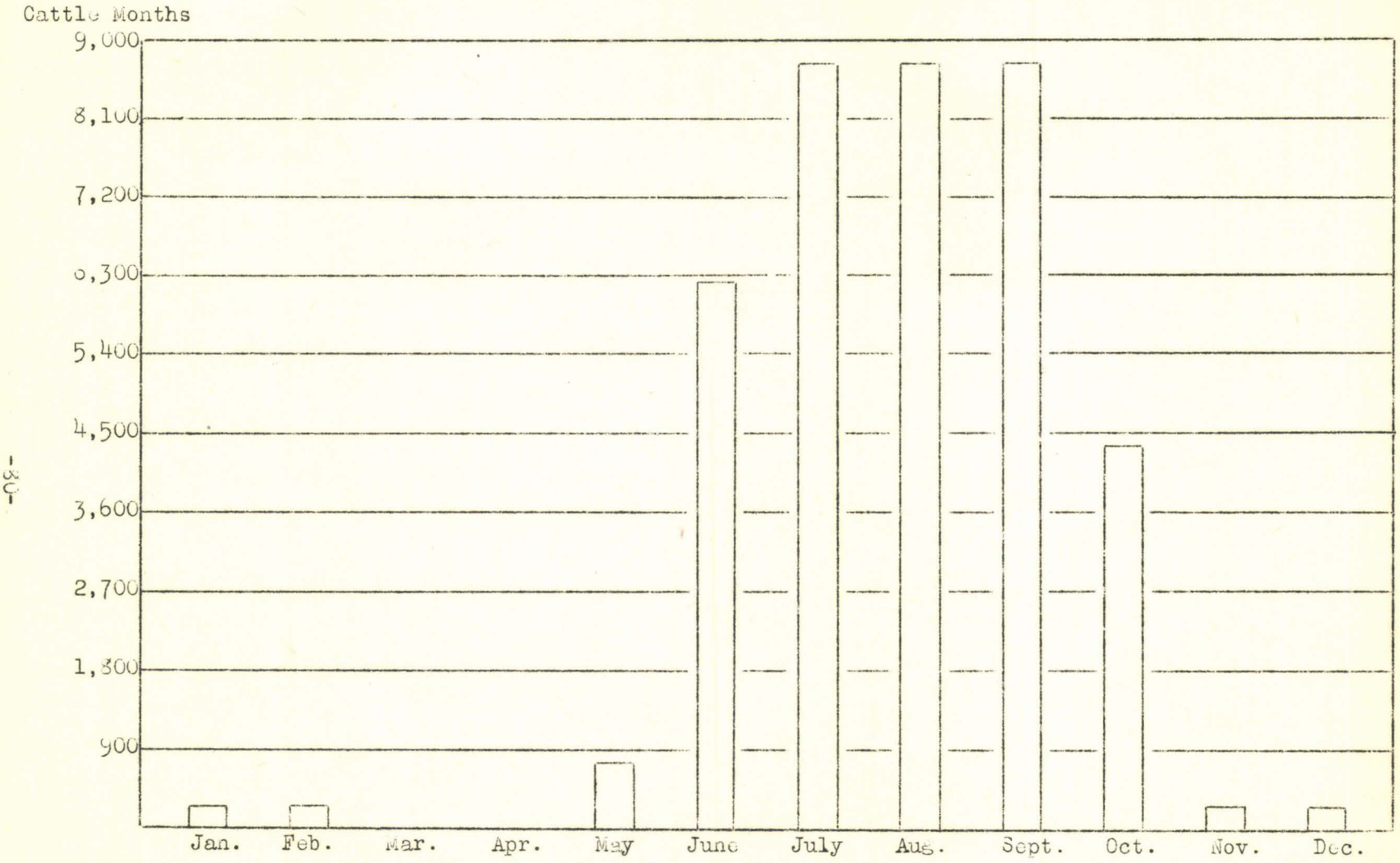

Figure 52.- Months of permitted use for cattle permitted to graze on the Ashley National Forest during each month, 1939.

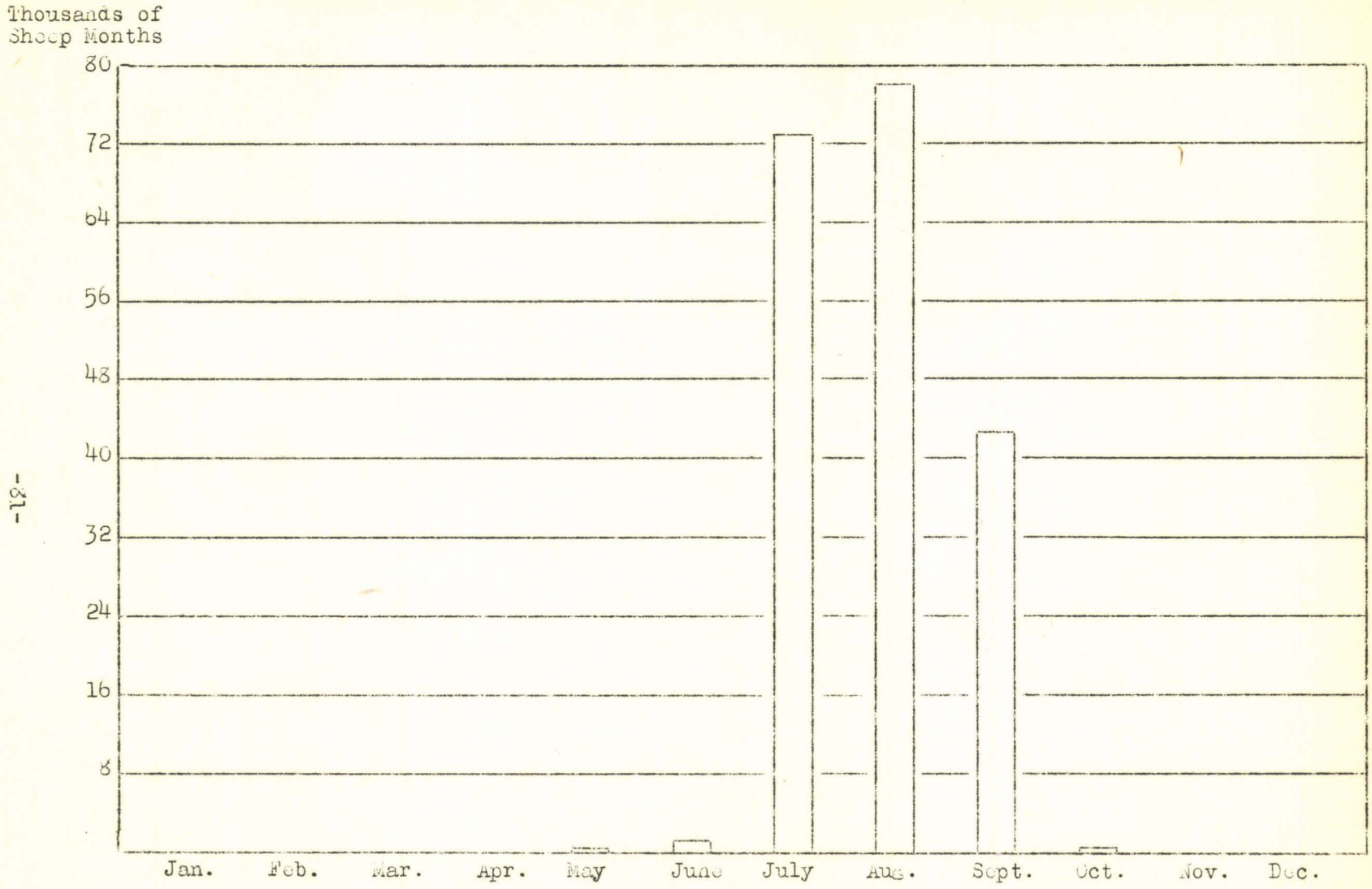

Figure 53.- Months of permitted use for sheep permitted to graze on the Ashley National Forest during each month, 1939.

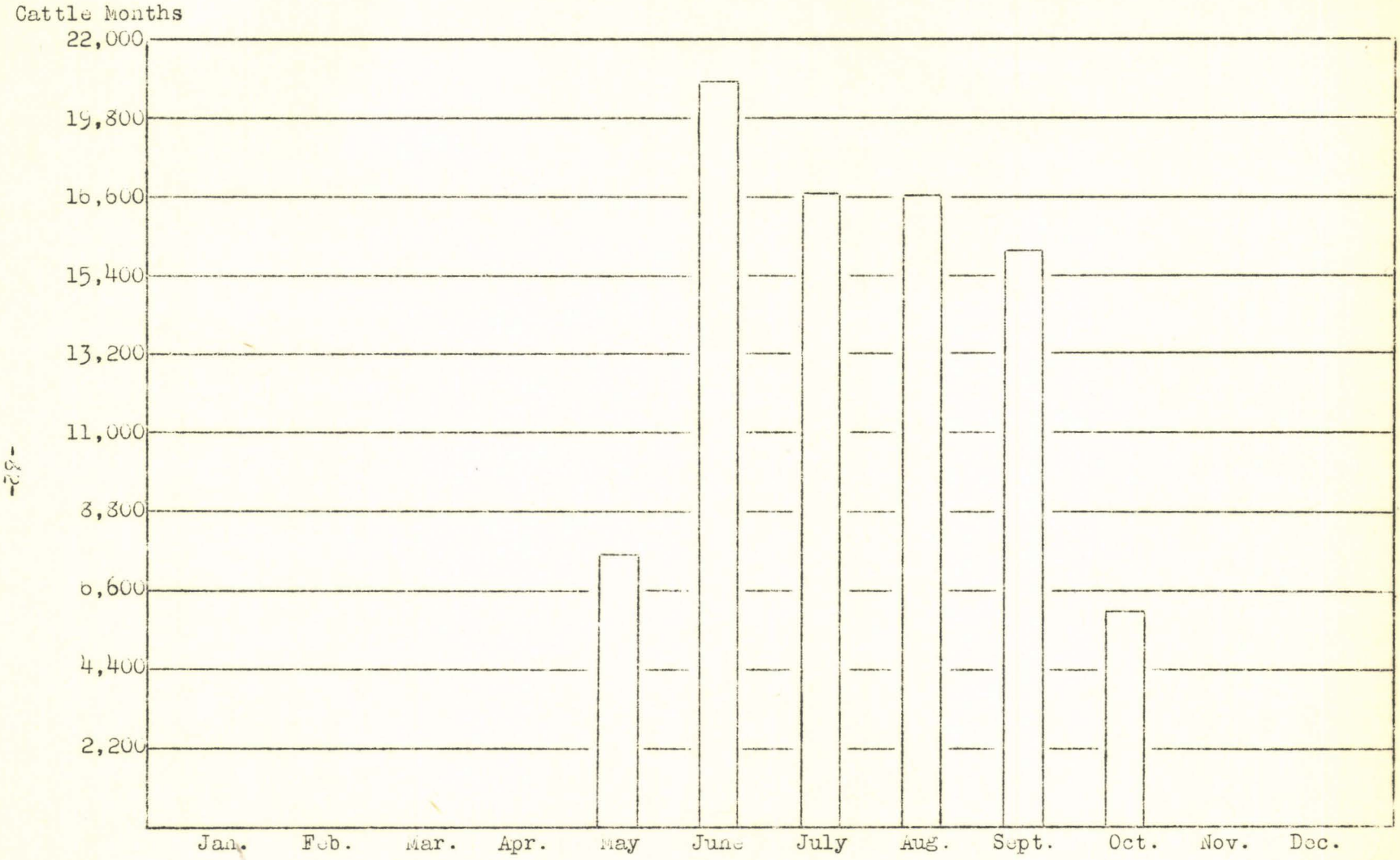

Figure 54.- Months of permitted use for cattle permitted to graze on the Cache National Forest during each month, 1939.

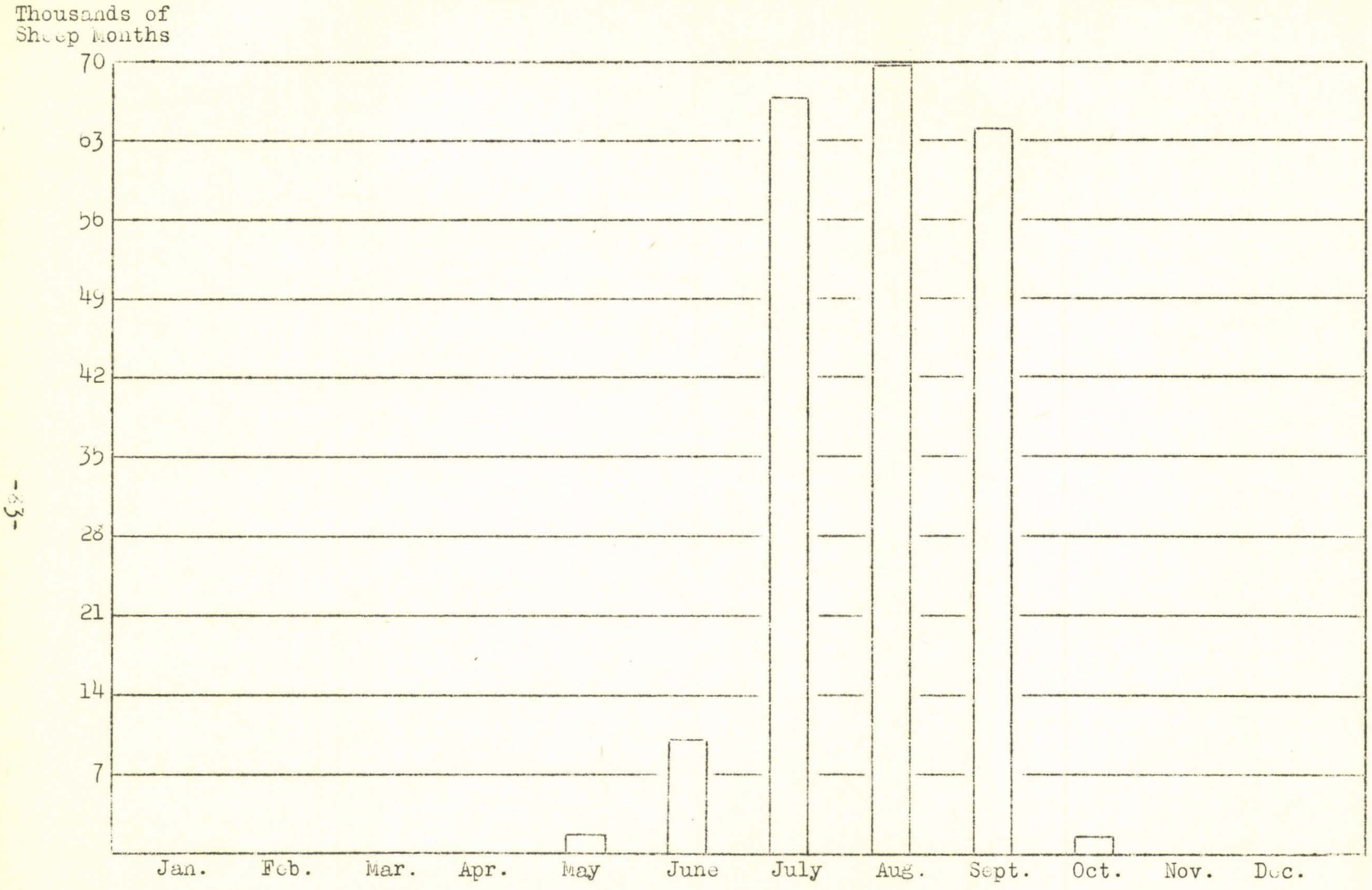

Figure 55.- Months of permitted use for sheep permitted to graze on the Cache National Forest during each month, 1939.

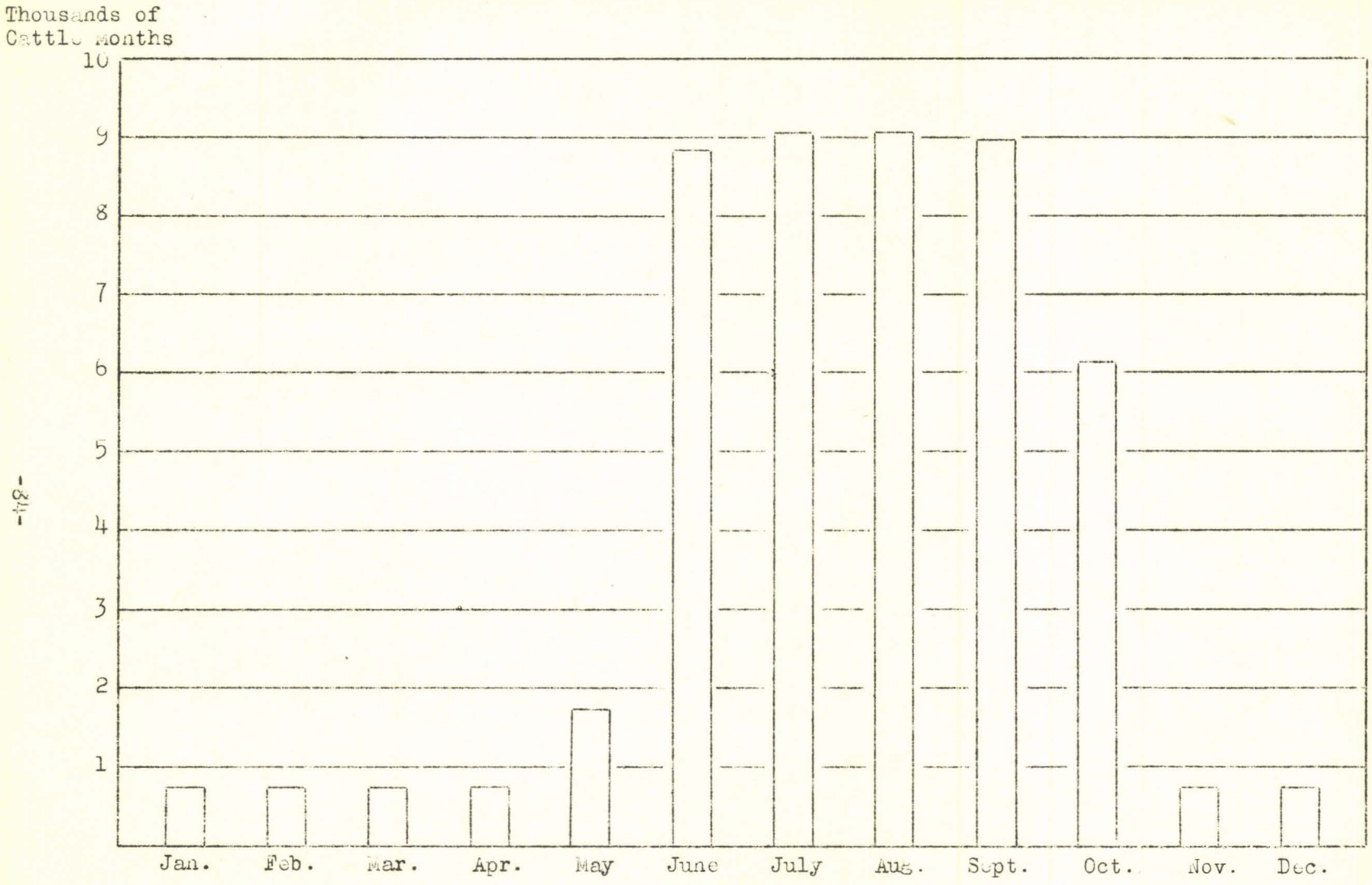

Figure 56.- Months of permitted use for cattle permitted to graze on the Dixie National Forest during each month, 1939.

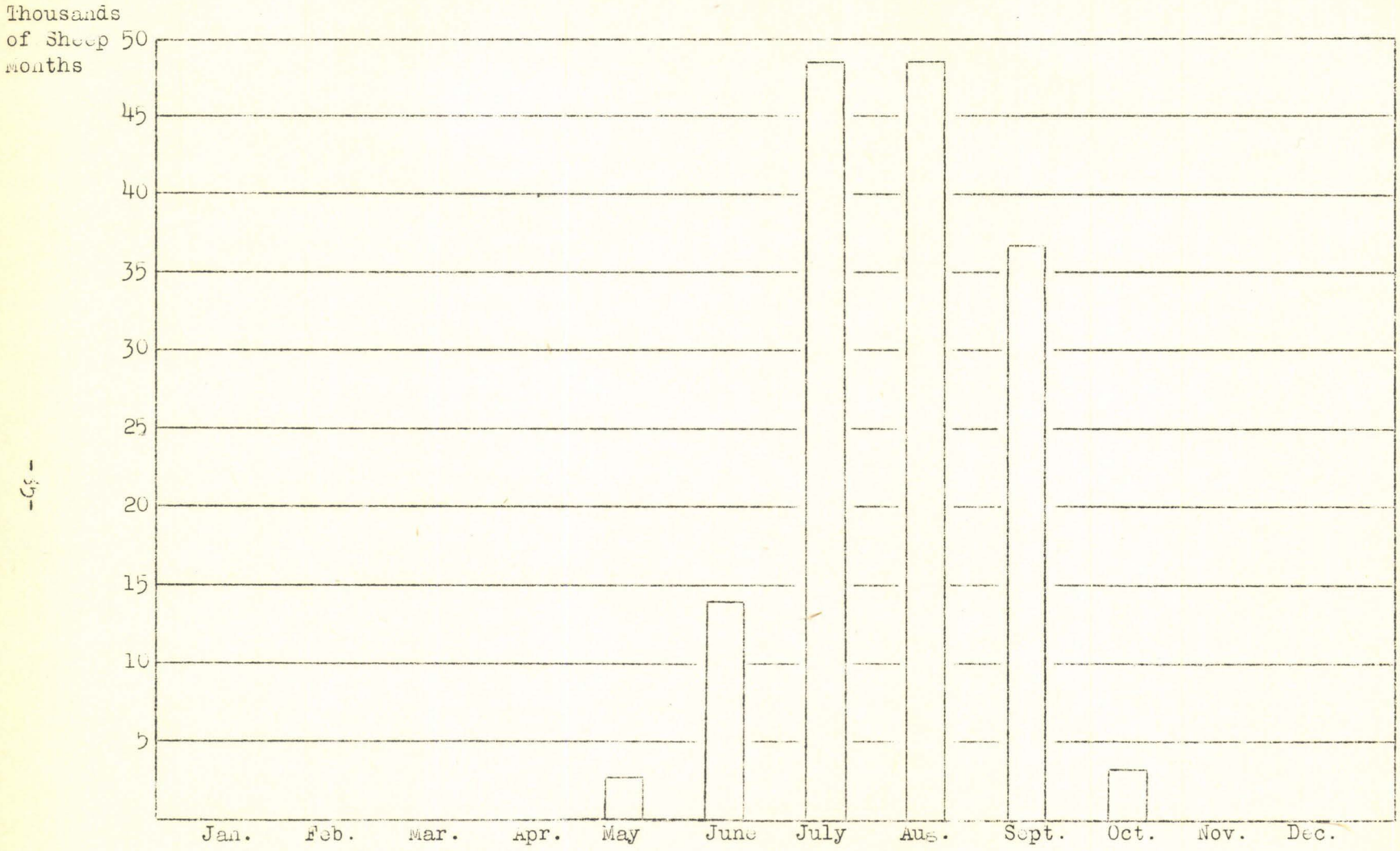

Figure 57.- Months of permitted use for sheep permitted to graze on the Dixie National Forest during each month, 1939.

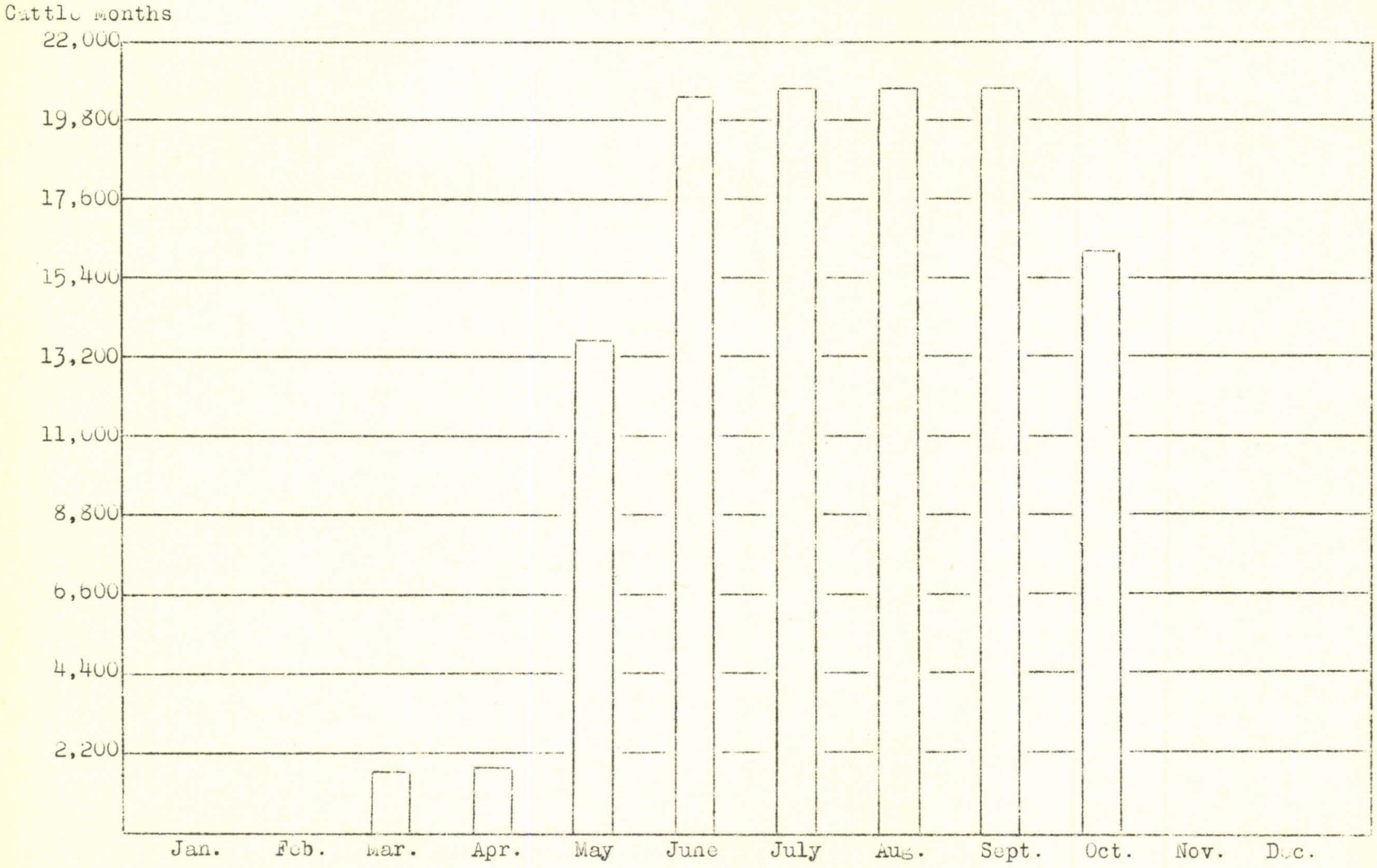

Figure 58.- Months of permitted use for cattle permitted to graze on the Fishlake National Forest during each month, 1939.

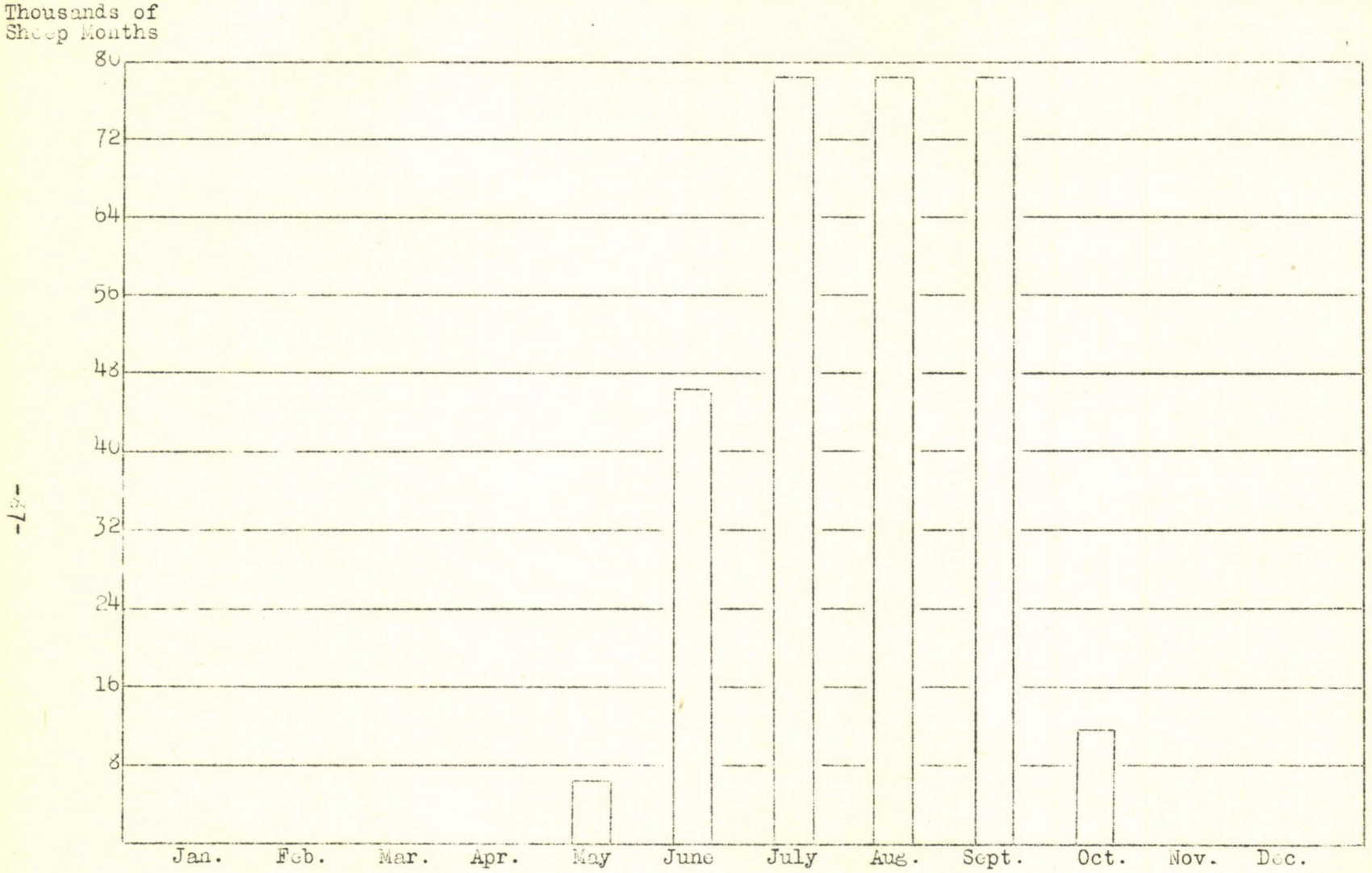

Figure 59.- Months of permitted use for sheep permitted to graze on the Fishlake National Forest during each month, 1939.

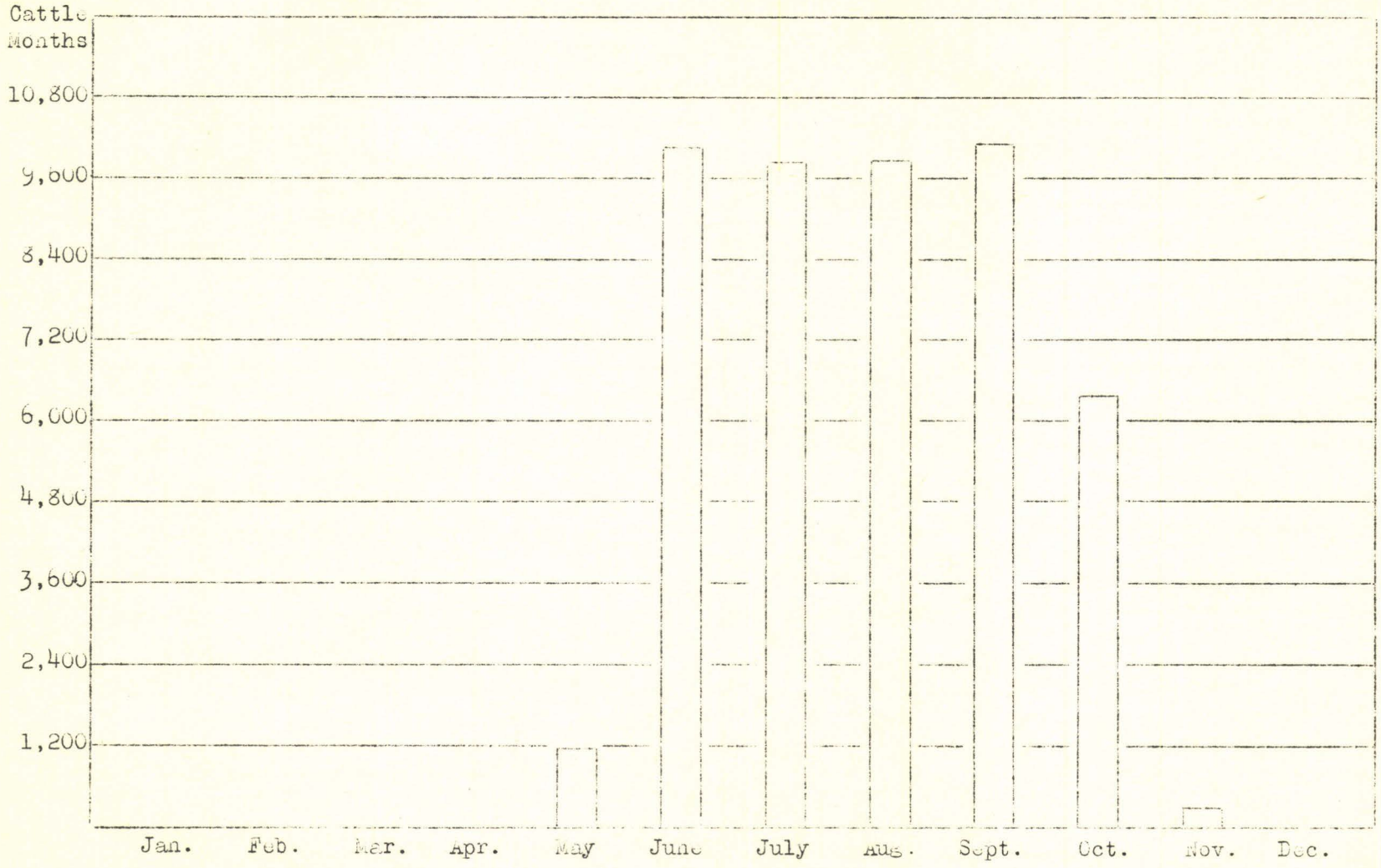

Figure 60.- Months of permitted use for cattle permitted to graze on the LaSal National Forest during each month, 1939.

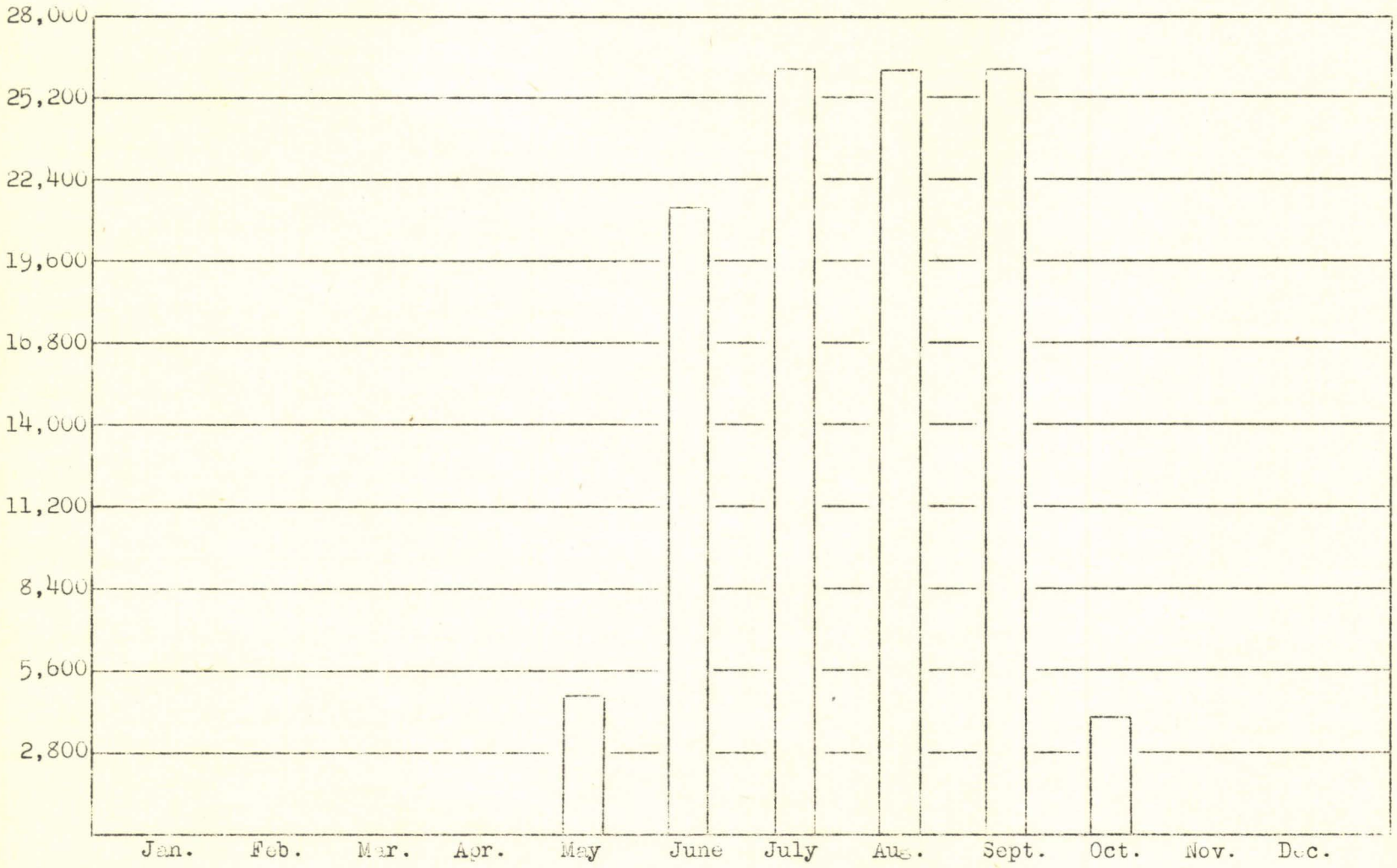

Figure 61.- Months of permitted use for sheep permitted to graze on the LaSal National Forest during each month, 1939.

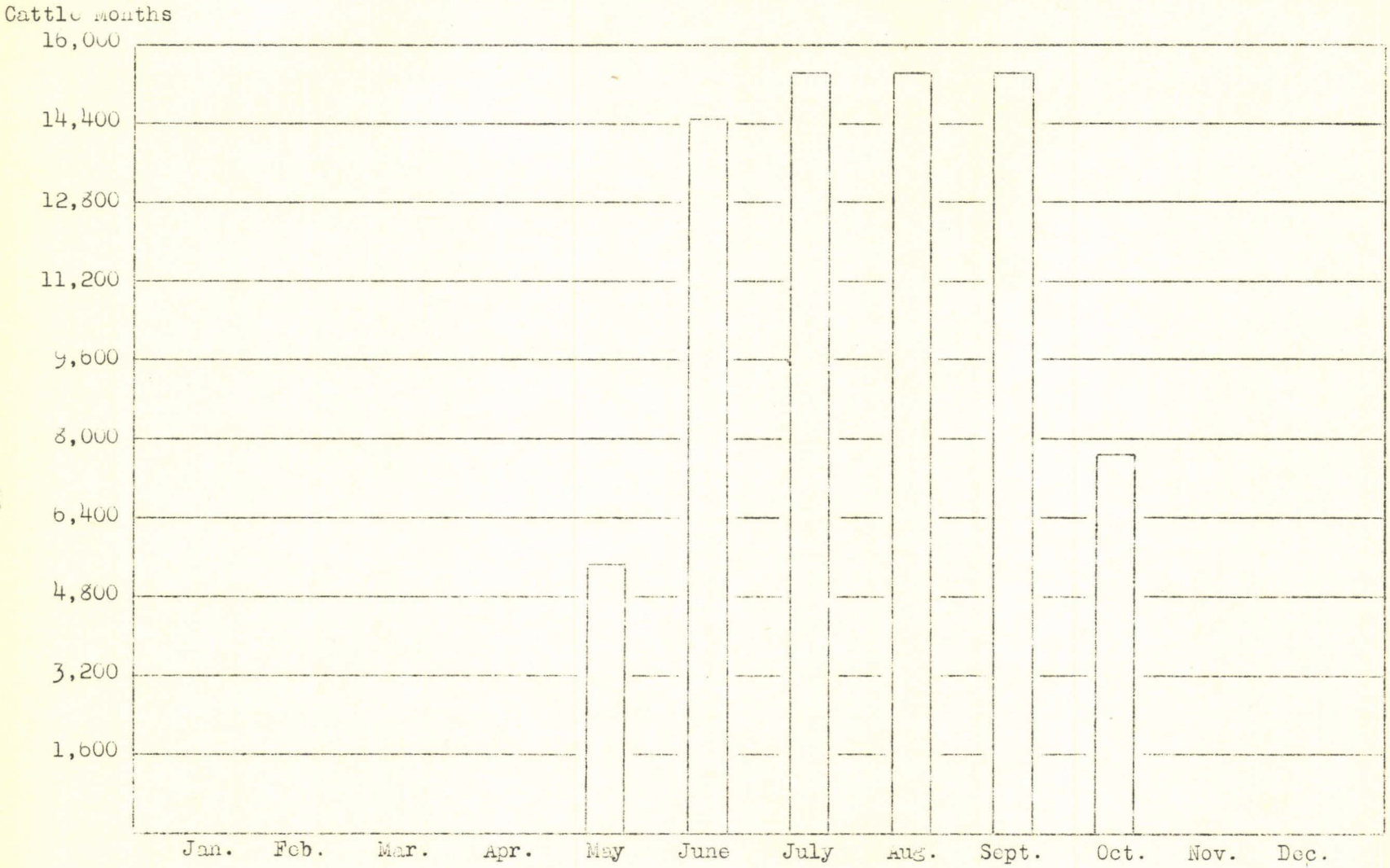

Figure 62.- Months of permitted use for cattle permitted to graze on the Manti National Forest during each month, 1939.

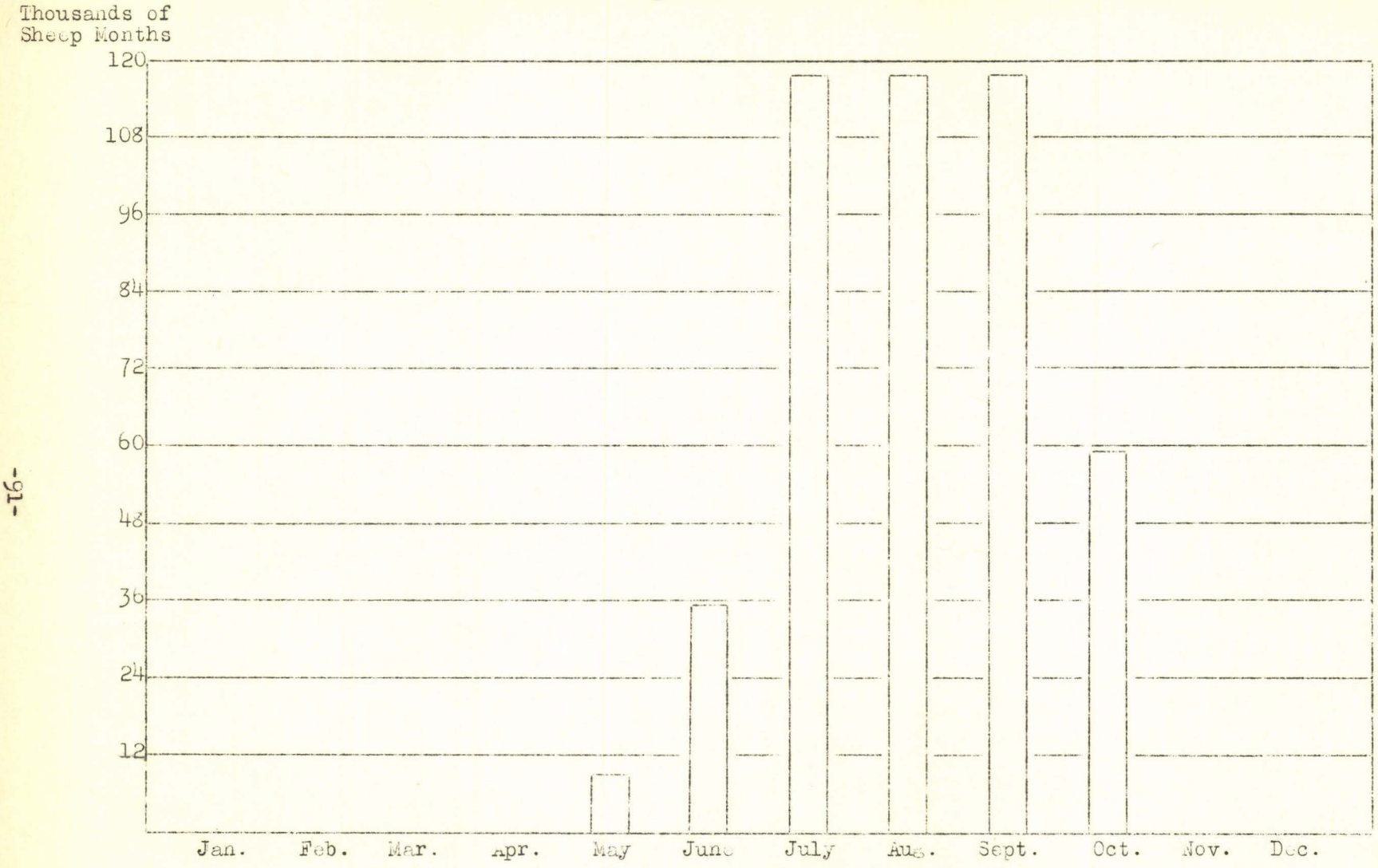

Figure 63.- Months of permitted use for sheep permitted to graze on the Manti National Forest during each month, 1939.

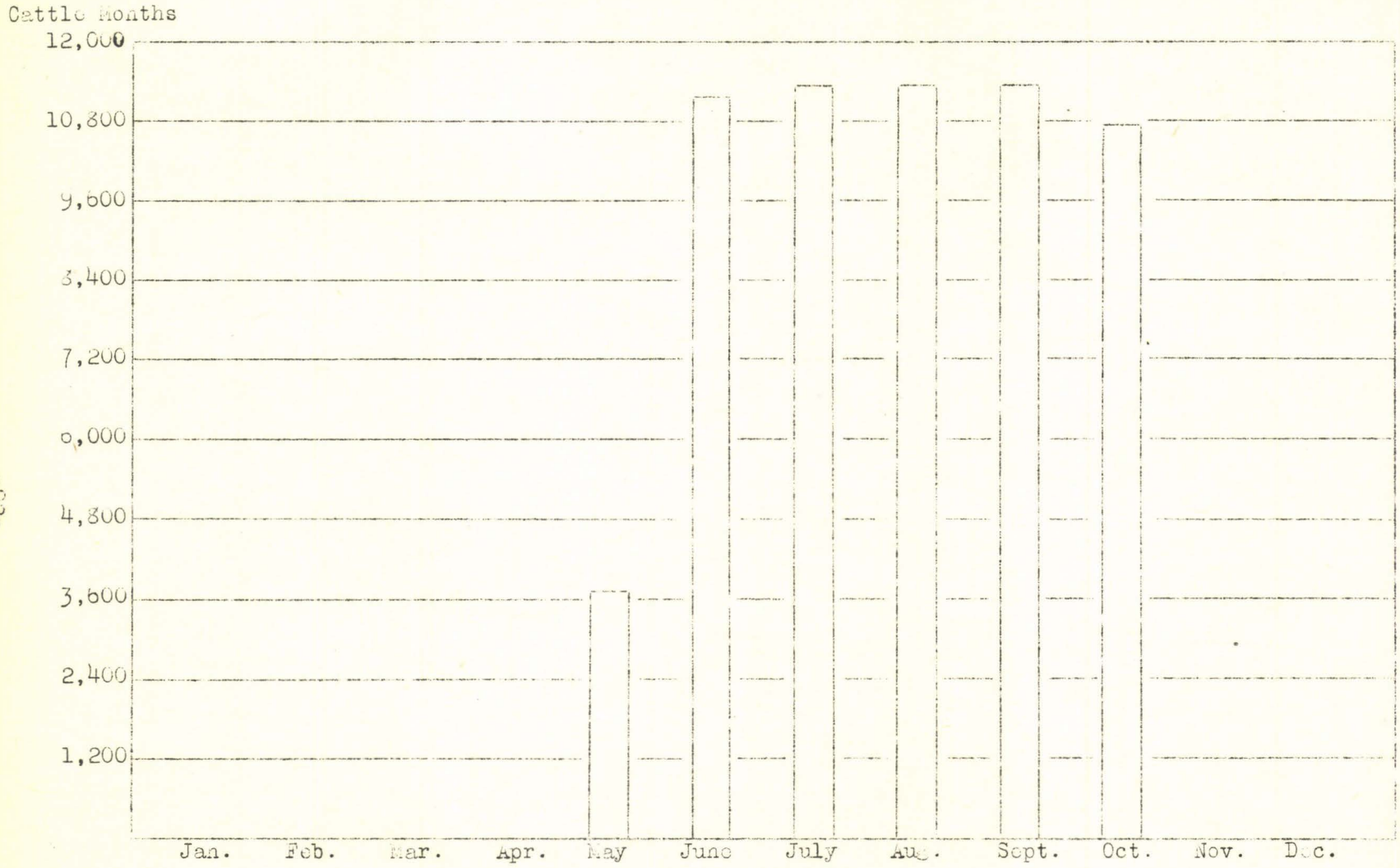

Figure 64.- Months of permitted use for cattle permitted to graze on the Powell National Forest during each month, 1939.

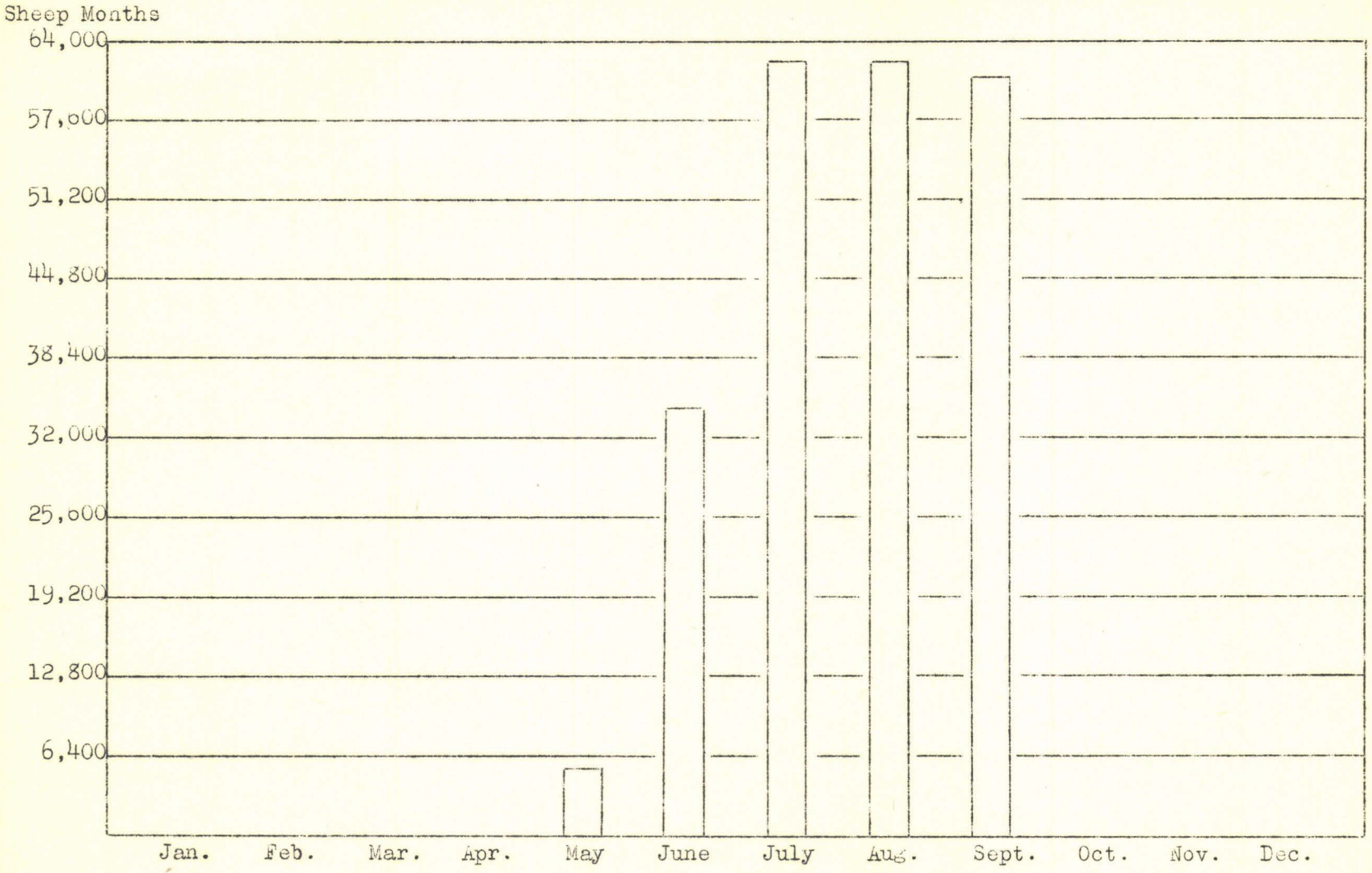

Figure 65.- Months of permitted use for sheep permitted to graze on the Powell National Forest during each month, 1939.

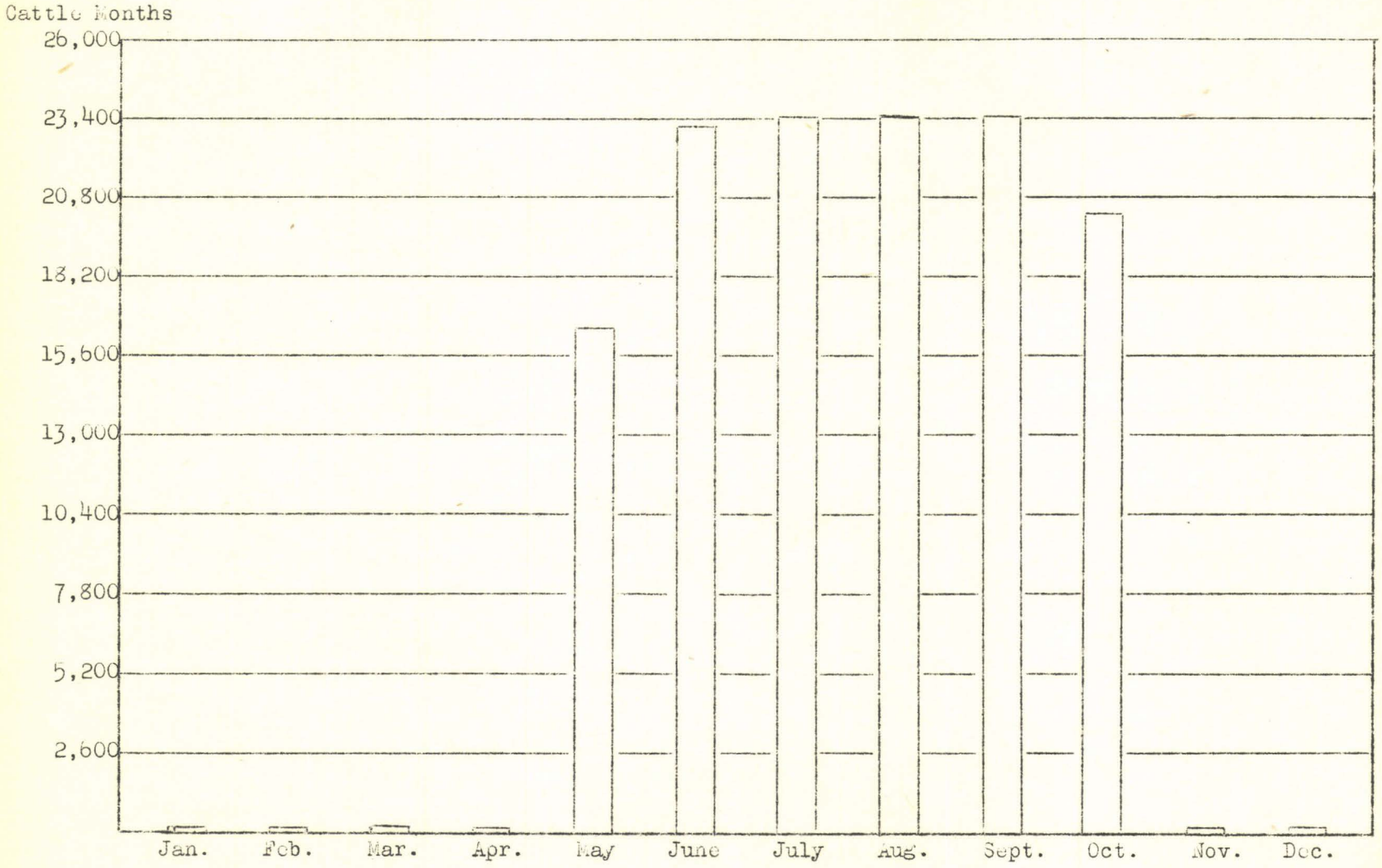

Figure 66.- Months of permitted use for cattle permitted to graze on the Uinta National Forest during each month, 1939.

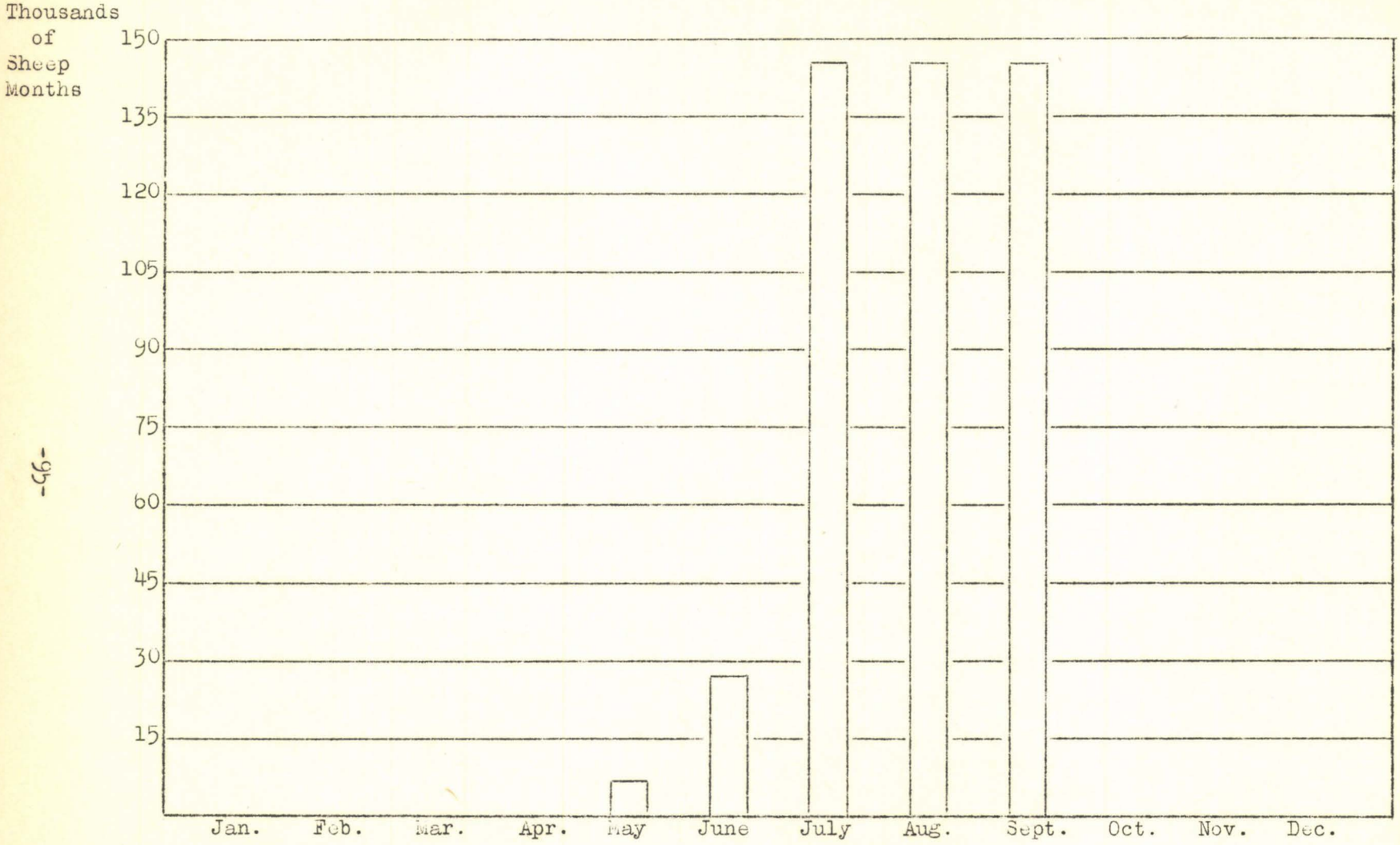

Figure 67.- Months of permitted use for sheep permitted to graze on the Uinta National Forest during each month, 1939.

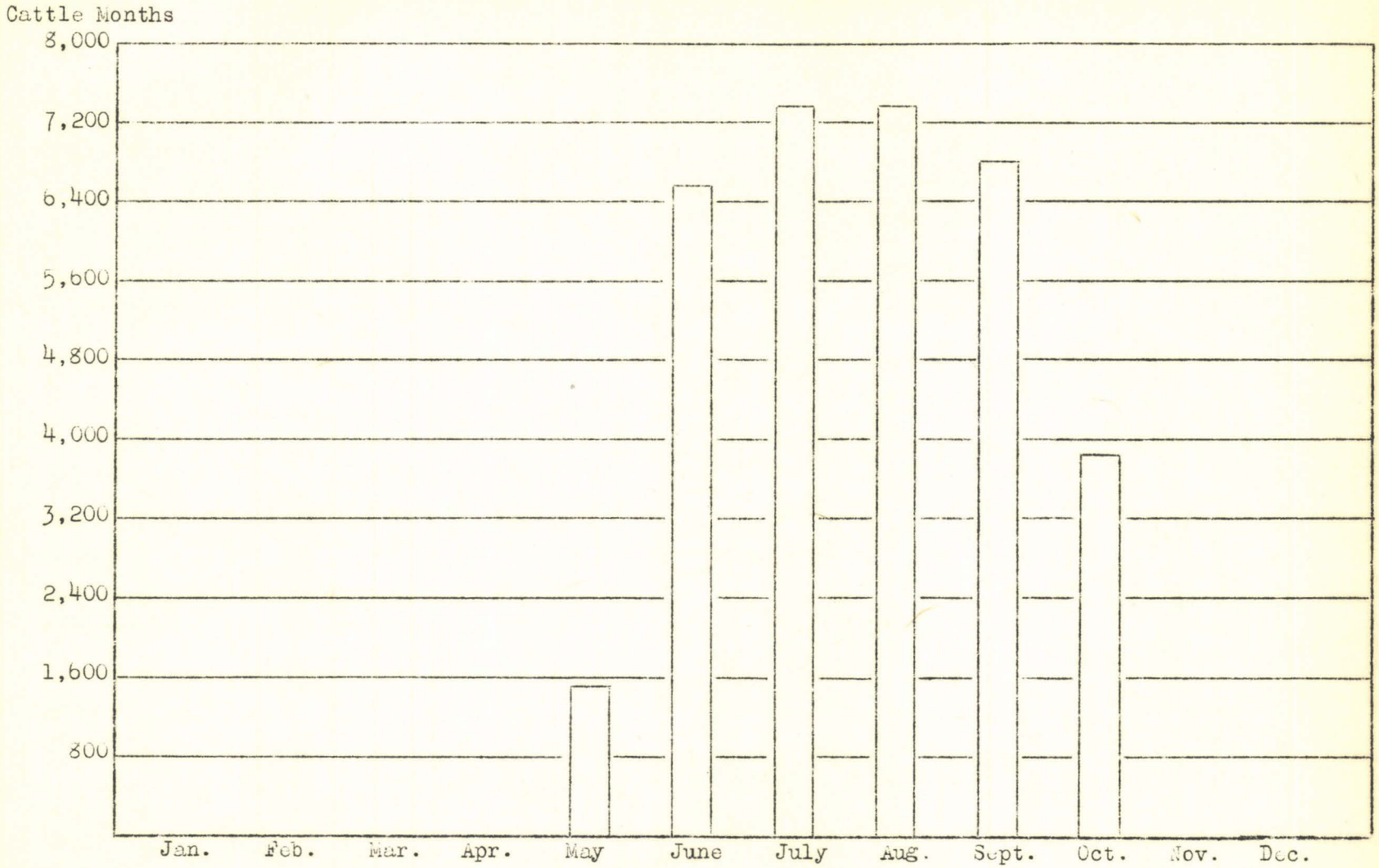

Figure 68.- Months of permitted use for cattle permitted to graze on the Wasatch National Forest during each month, 1939.

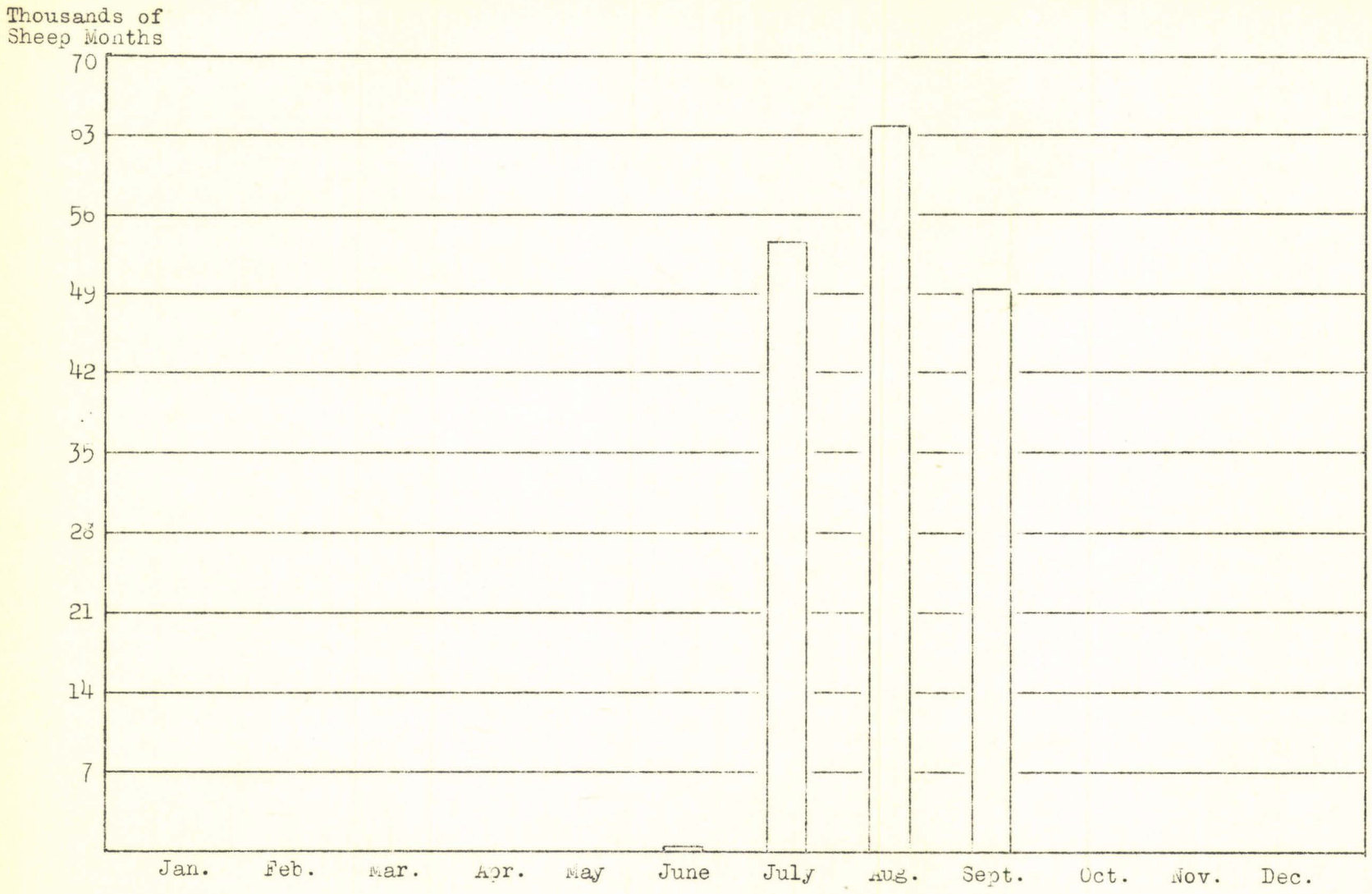

Figure 69.- Months of permitted use for sheep permitted to graze on the Wasatch National Forest during each month, 1939.

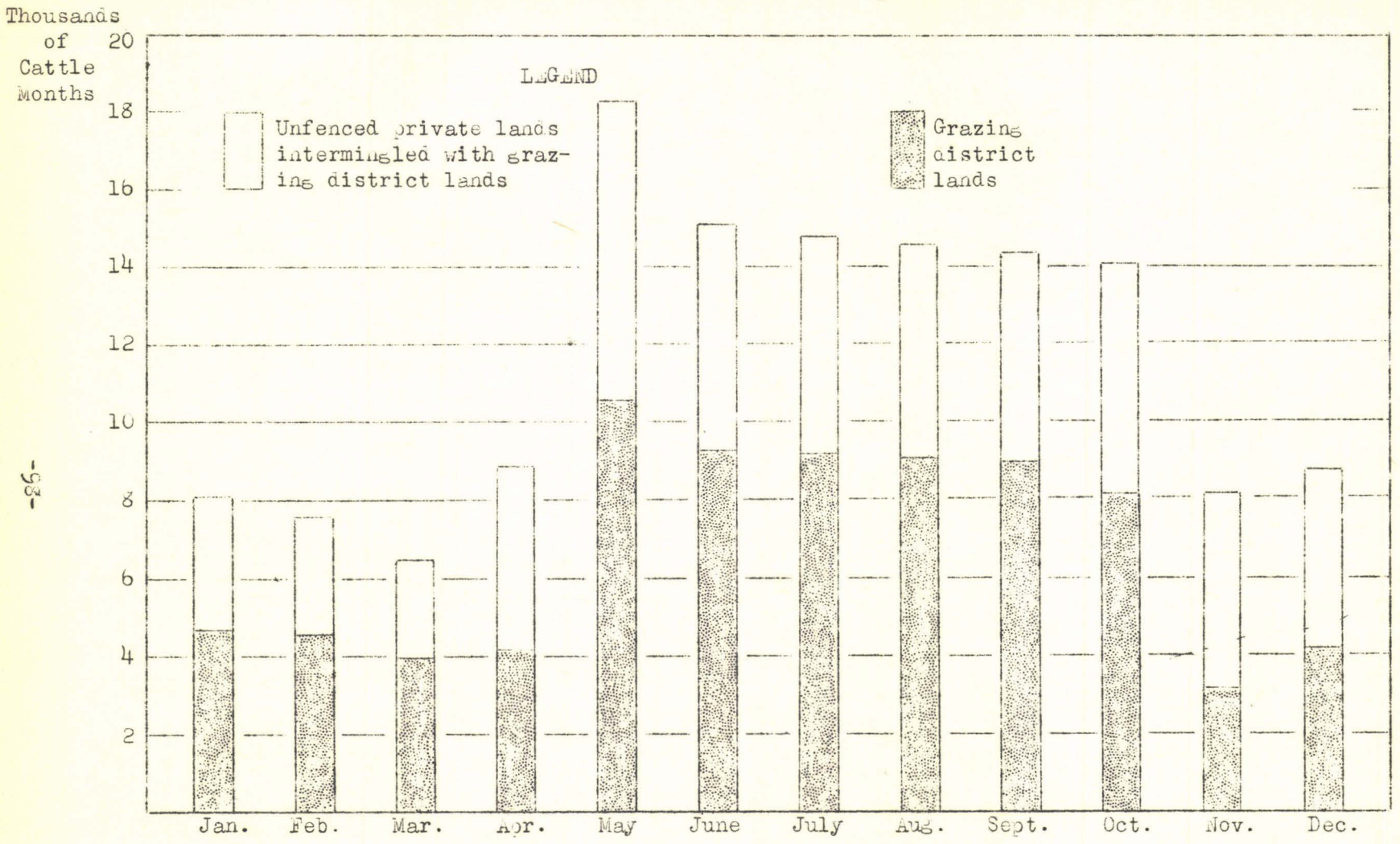

Figure 70.- Months of permitted use for cattle licensed to graze on the Promontory Grazing District during each month, 1939-1940.

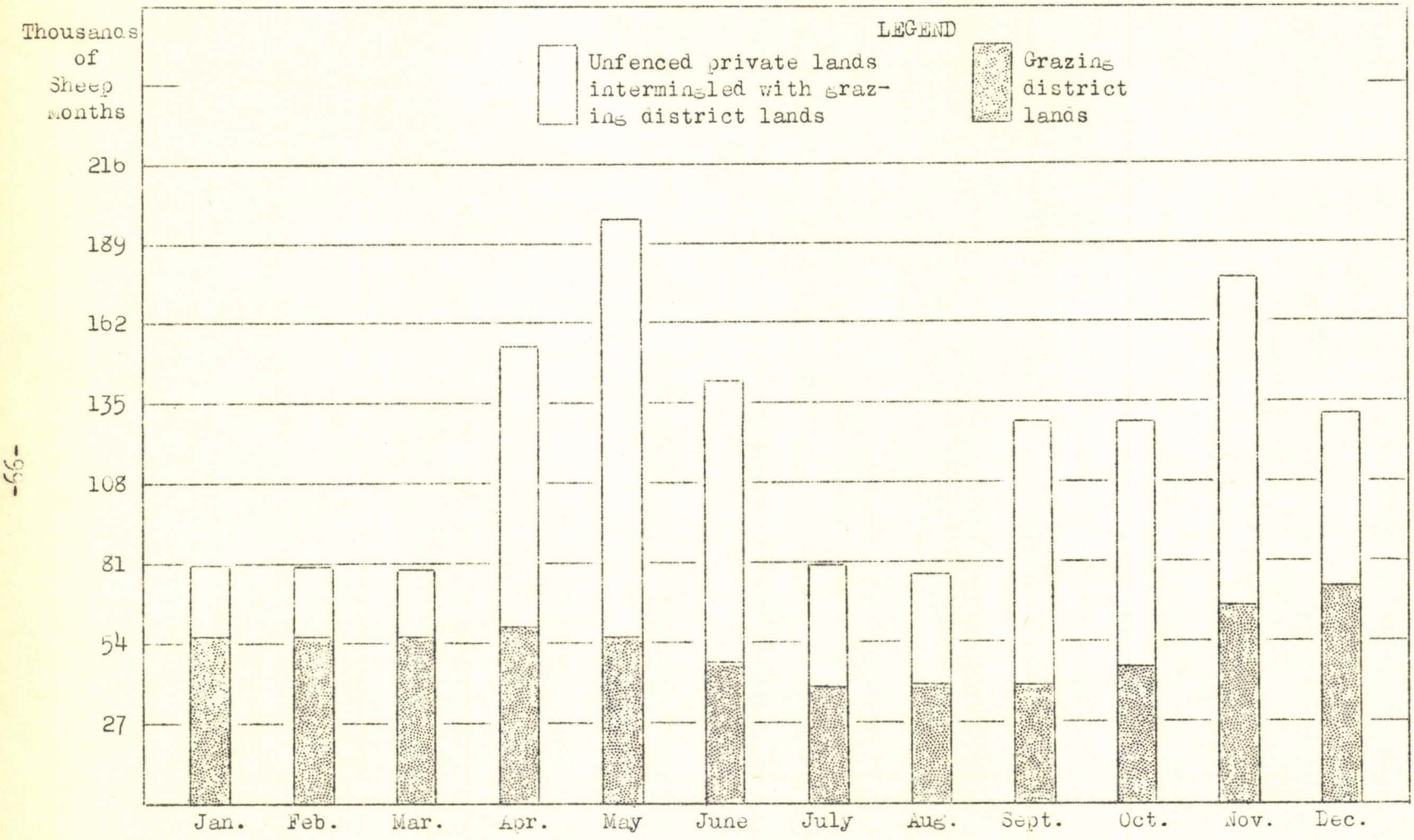

Figure 71.- Months of permitted use for sheep licensed to graze on the Promontory Grazing District during each month, 1939-1940.

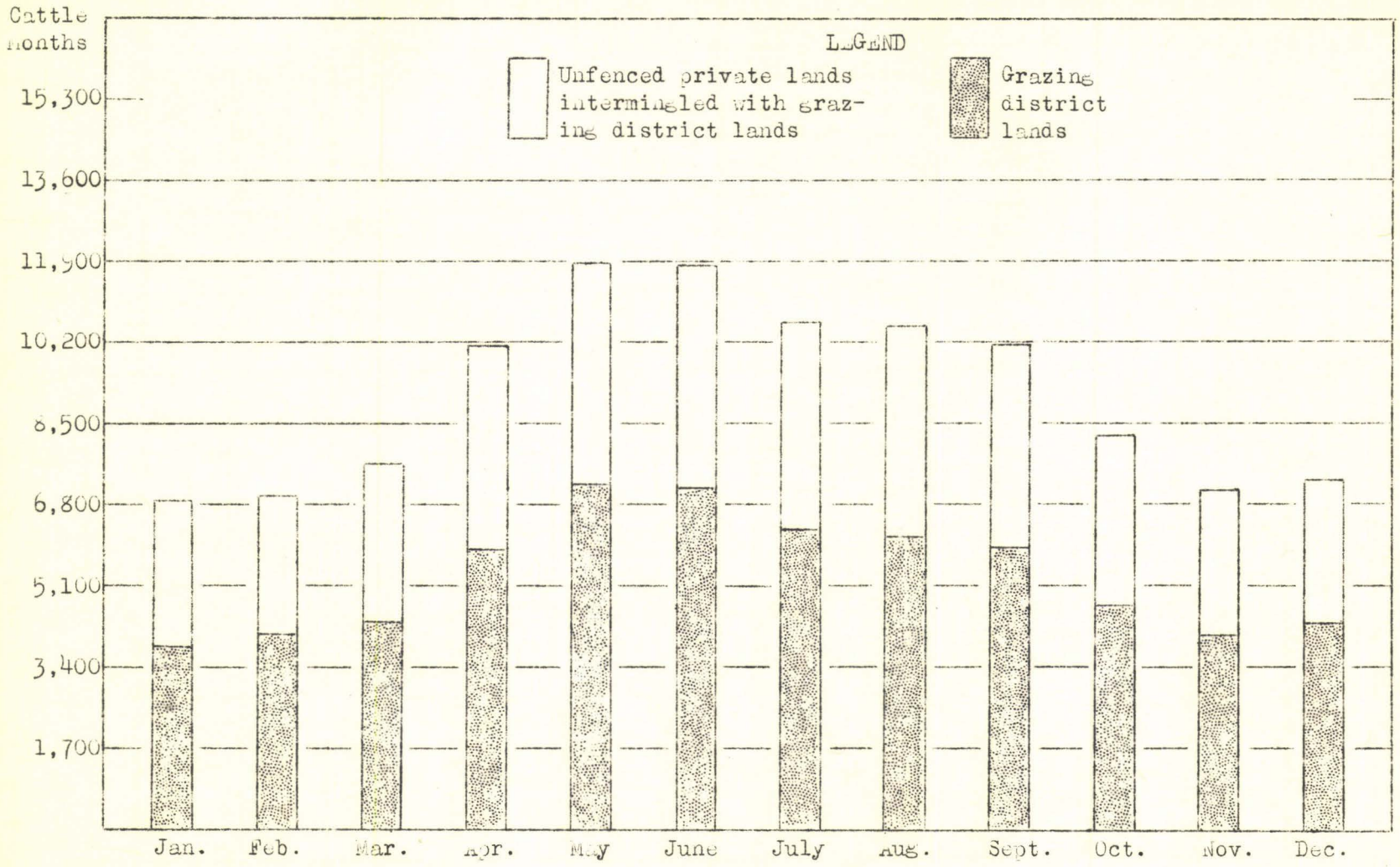

Figure 72.- Months of permitted use for cattle licensed to graze on the Bonneville Grazing District during each month, 1939-1940.

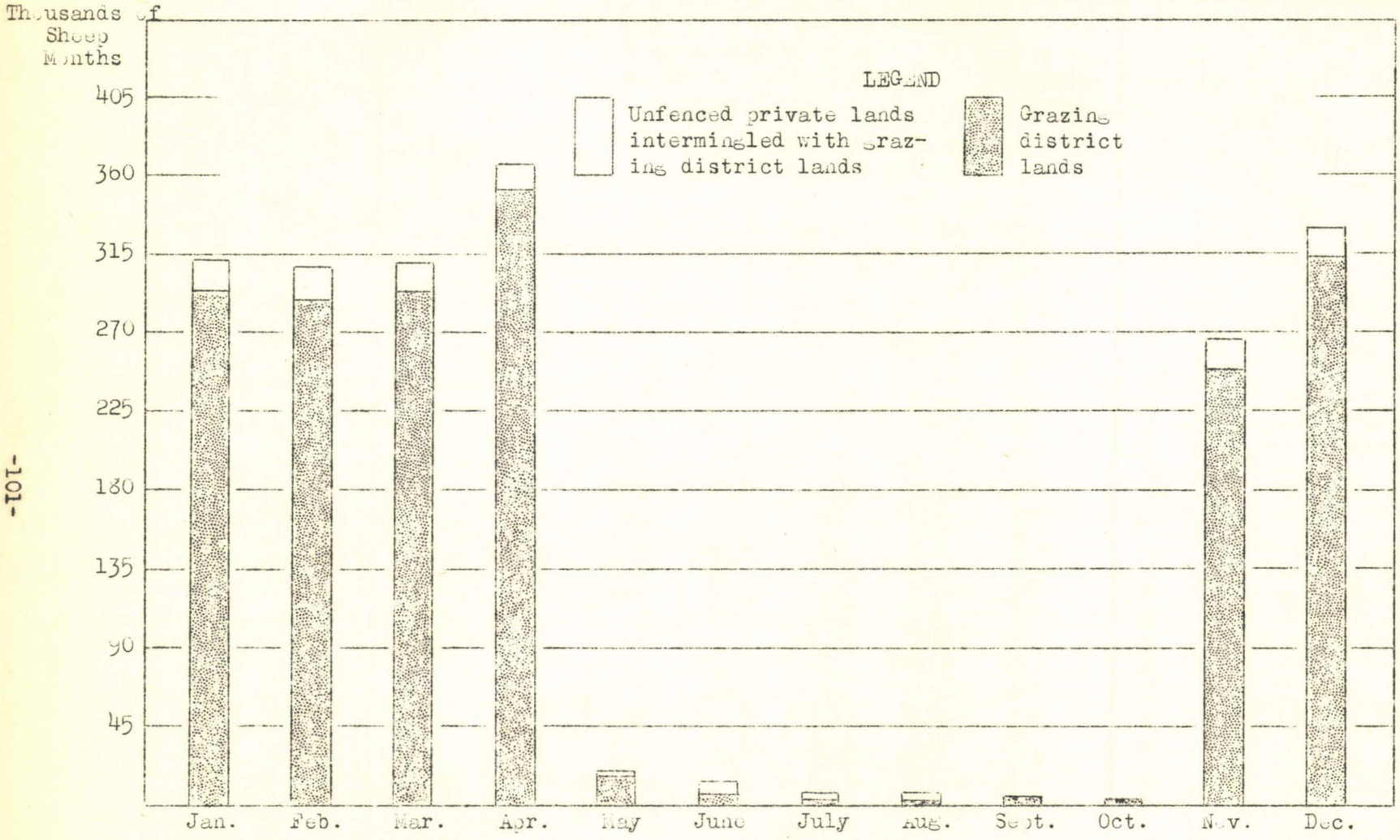

Figure 73.- Months of permitted use for sheep licensed to graze on the Bonneville Grazing District during each month, 1939-1940.

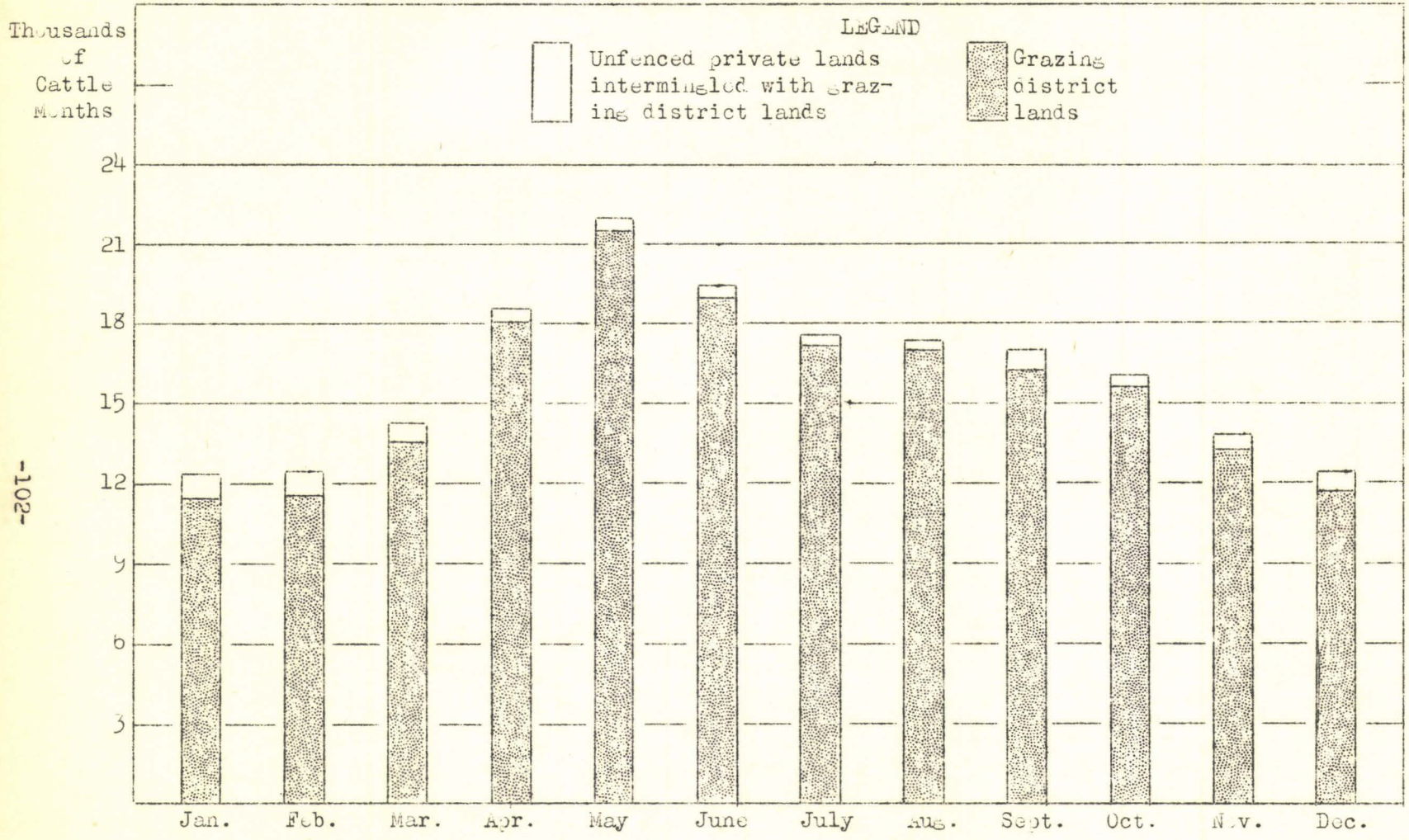

Figure 74.- Months of permitted use for cattle licensed to graze on the Pahvant Grazing District during each month, 1939-1940.

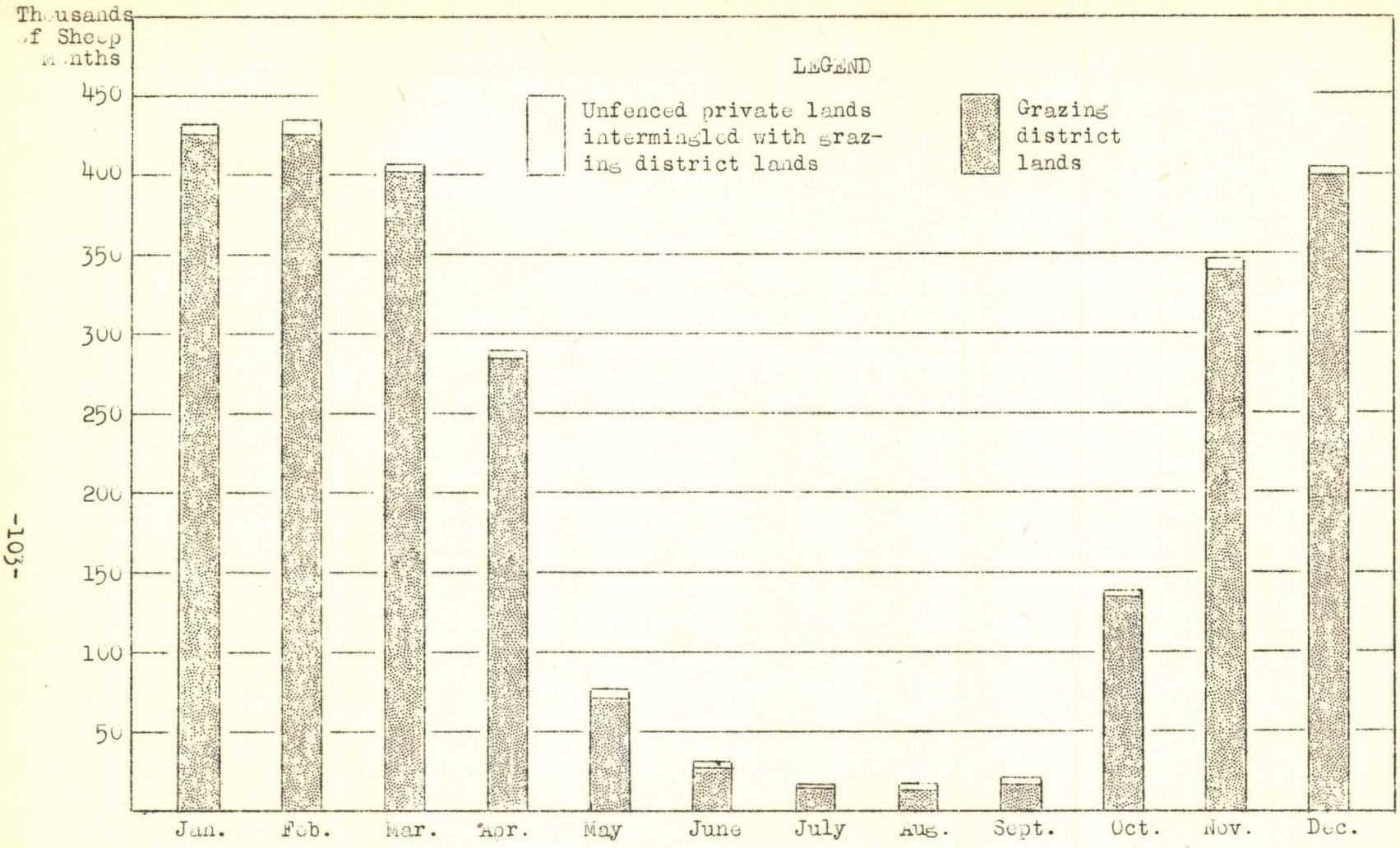

Figure 75.- Months of permitted use for sheep licensed to graze on the Pahvant Grazing District during each month, 1939-1940.

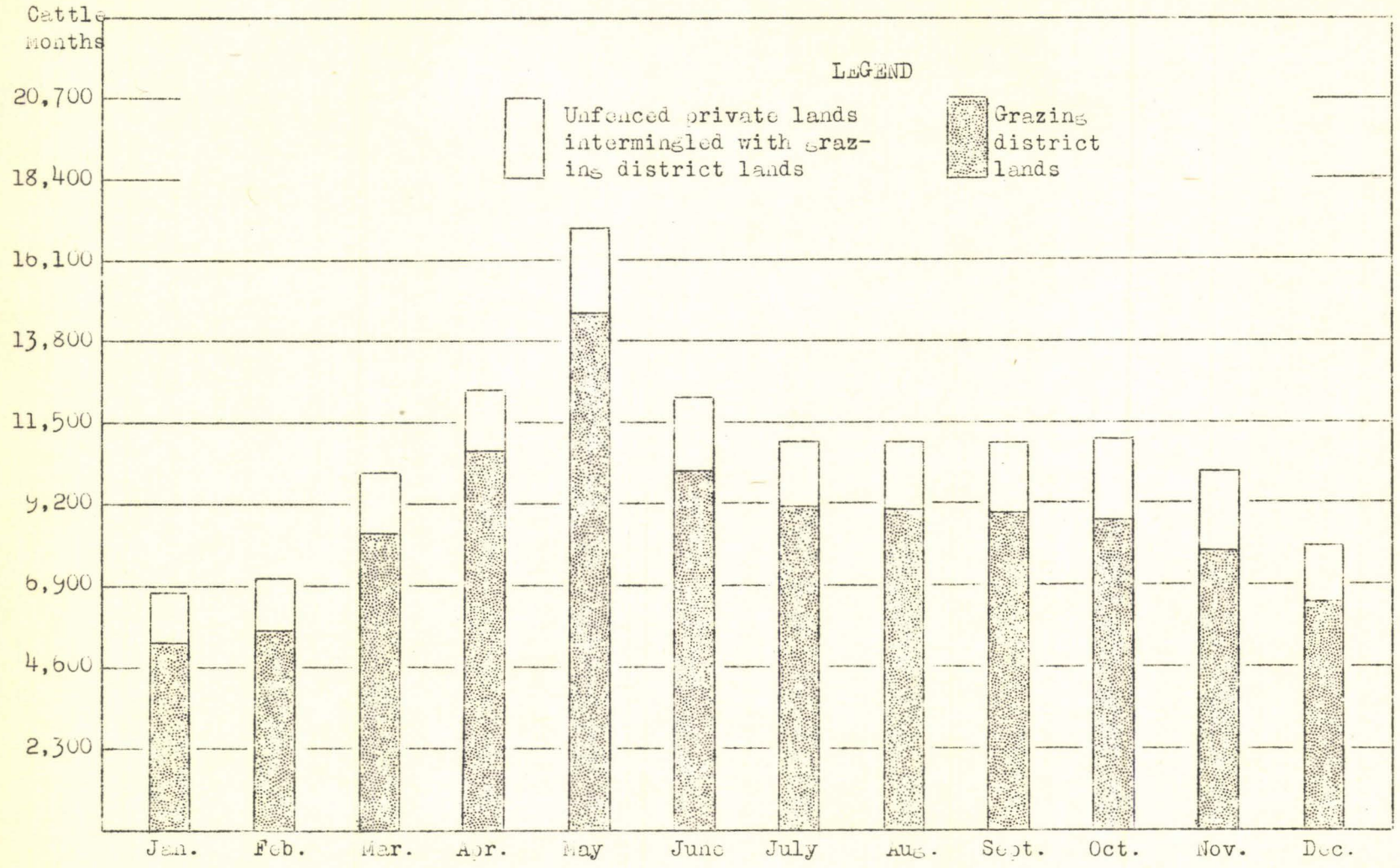

Figure 76.- Months of permitted use for cattle licensed to graze on the Virgin Grazing District during each month, 1939-1940.

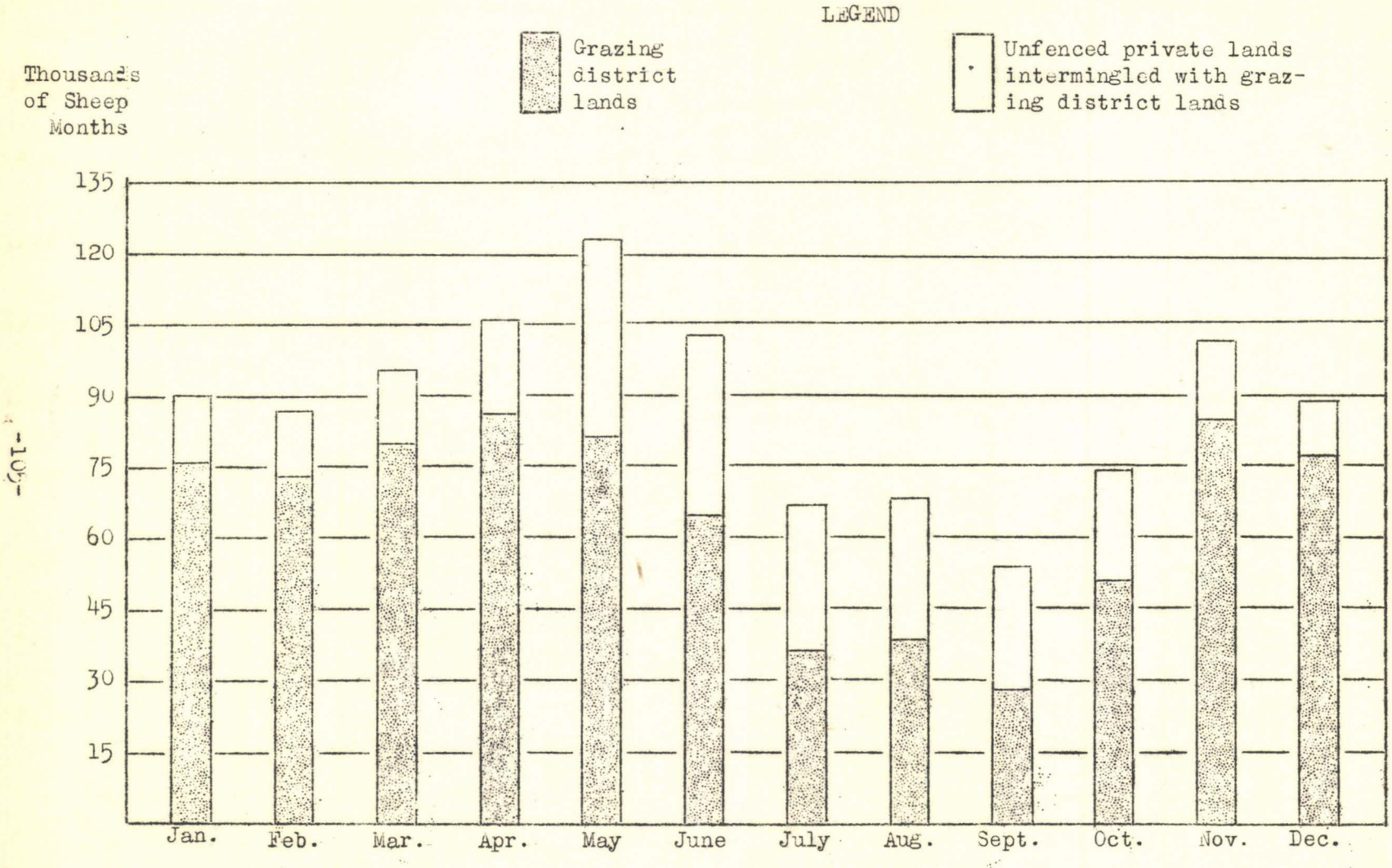

Figure 77.- Months of permitted use for sheep licensed to graze on the Virgin Grazing District during each month, 1939-1940.

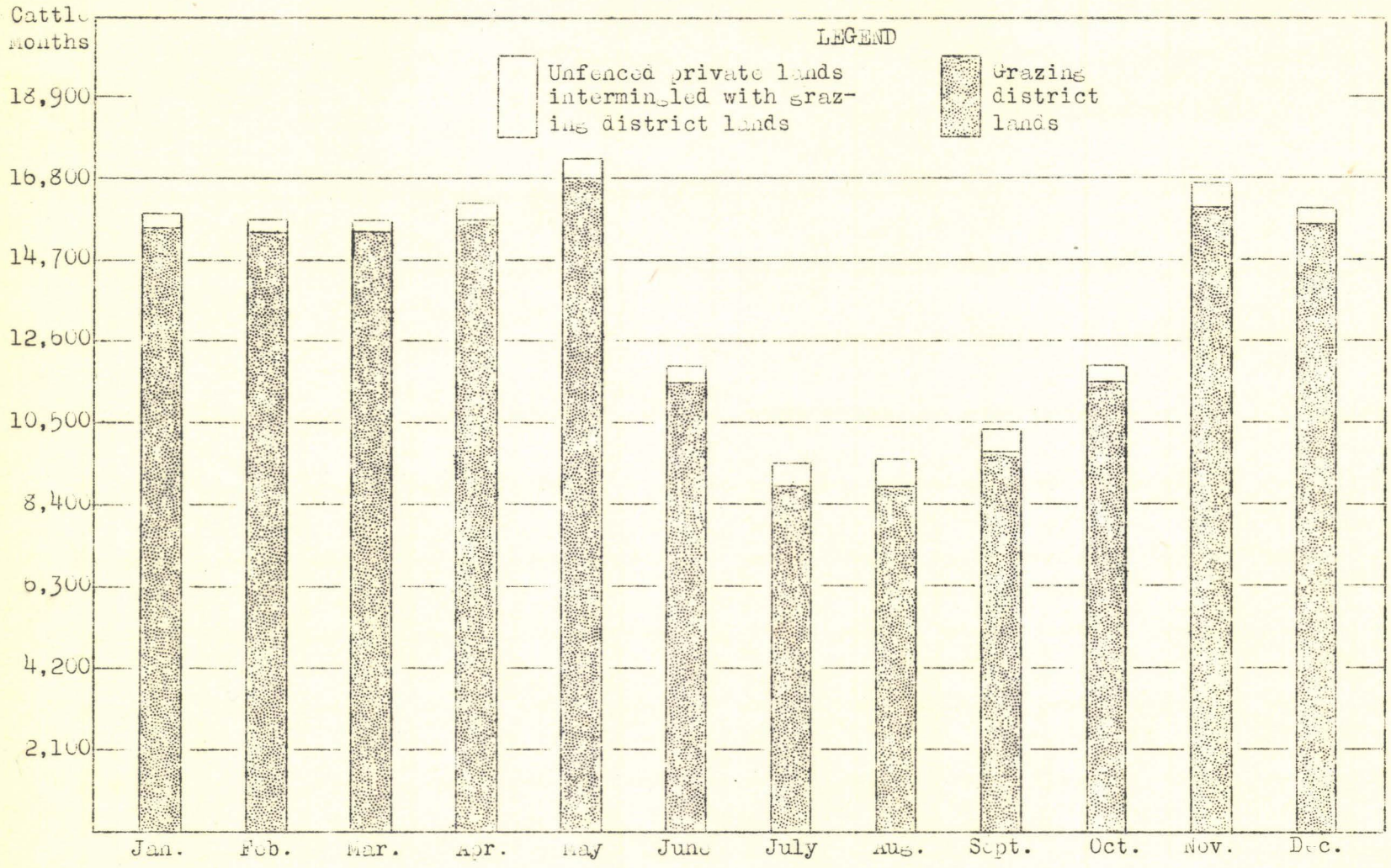

Figure 78.- Months of permitted use for cattle licensed to graze on the Escalante Grazing District during each month, 1939-1940.

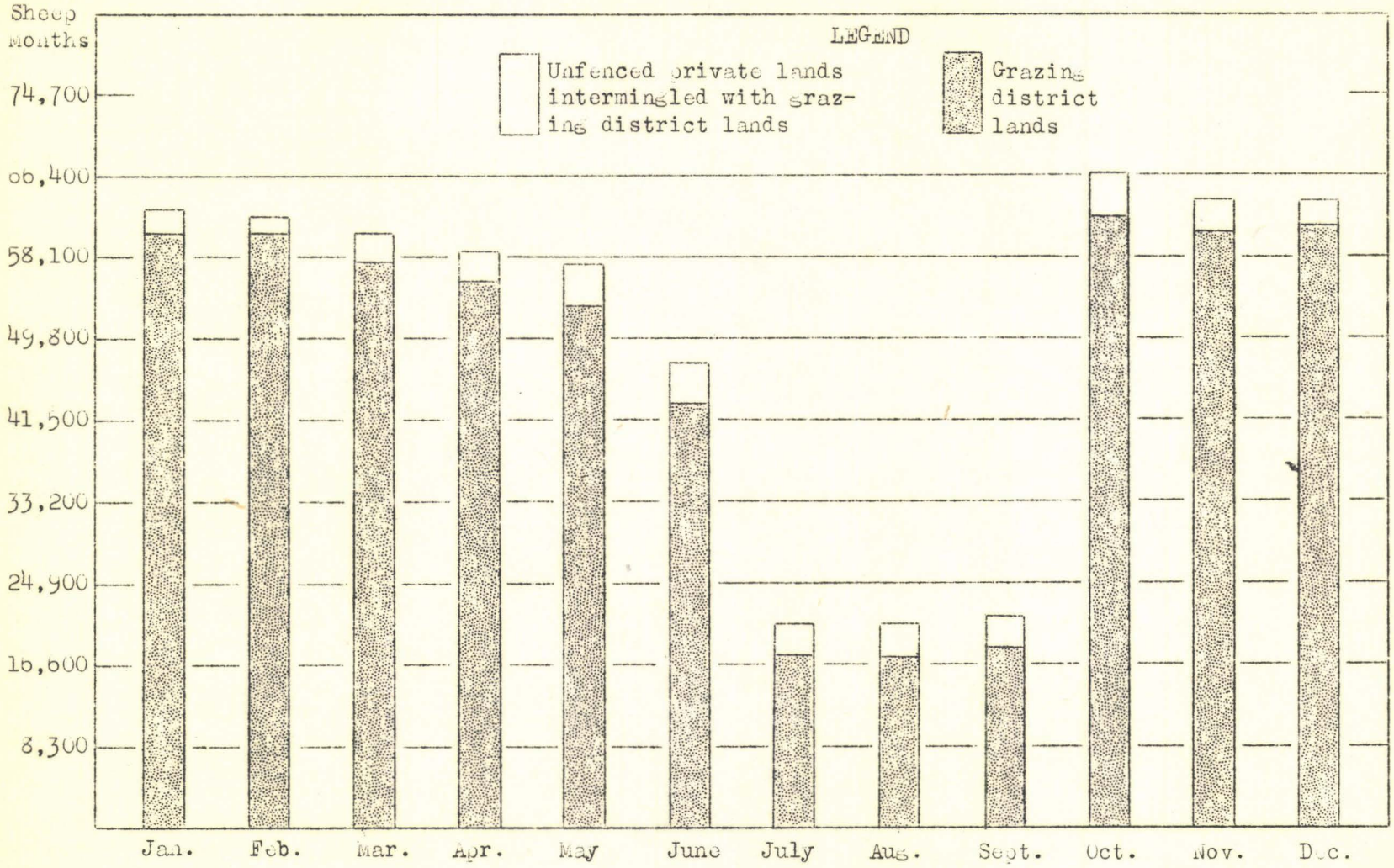

Figure 79.- Months of permitted use for sheep licensed to graze on the Escalante Grazing District during each month, 1939-1940.

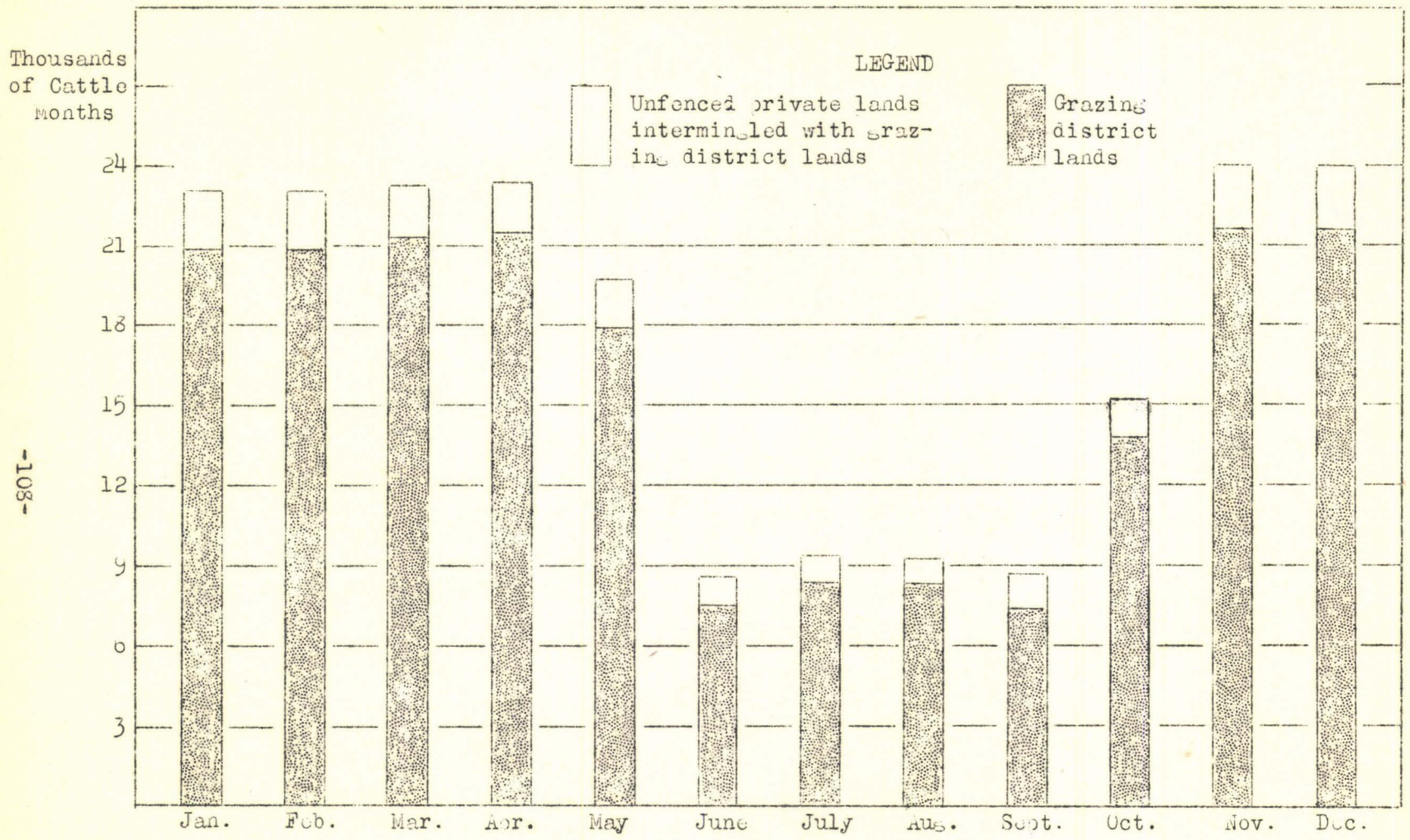

Figure 80.- Months of permitted use for cattle licensed to graze on the Grand and Monticello Grazing Districts during each month, 1939-1940.

Figure 81.- Months of permitted use for sheep licensed to graze on the Grand and Monticello Grazing Districts during each month, 1939-1940.

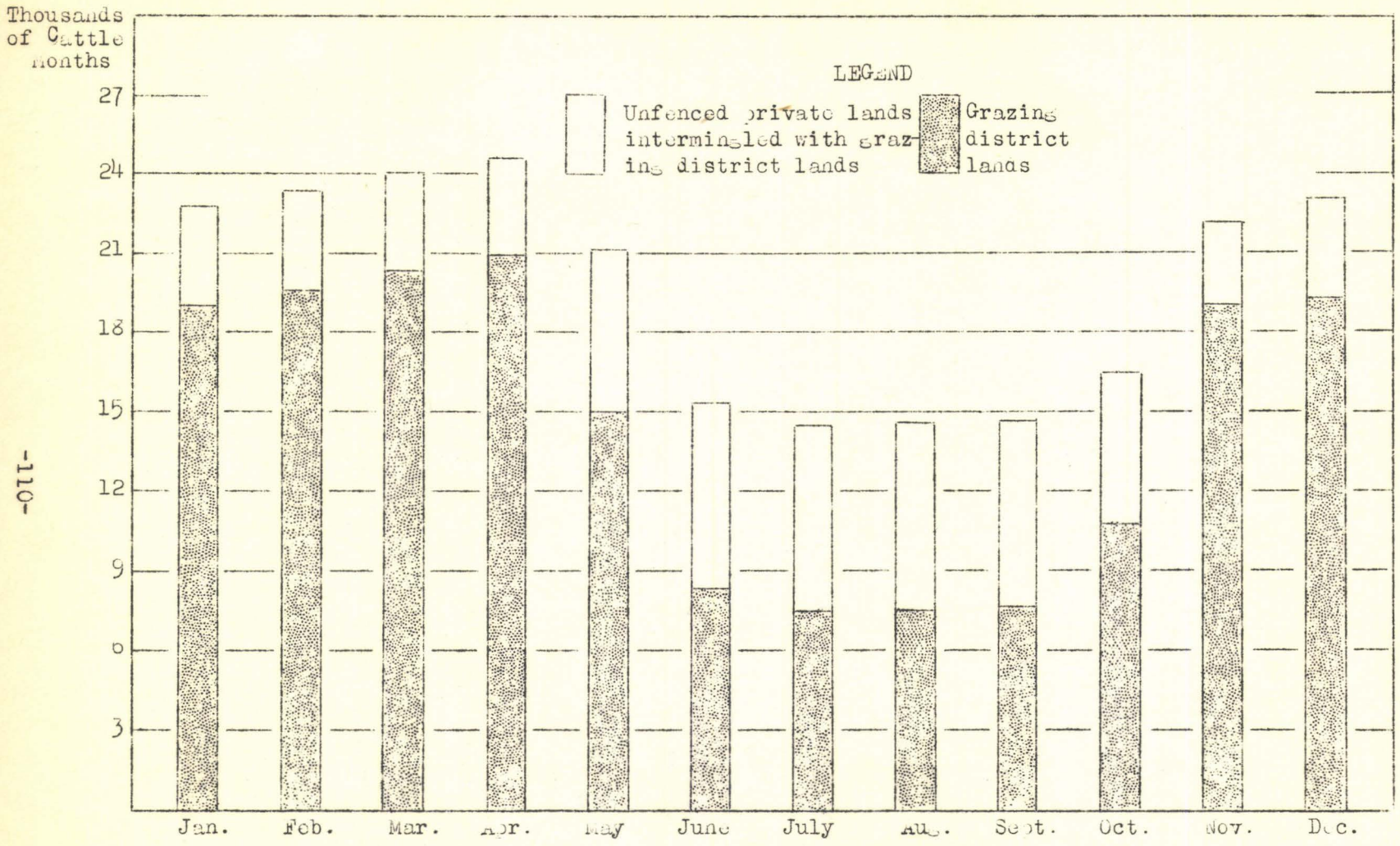

Figure 82.- Months of permitted use for cattle licensed to graze on the San Raphael Grazing District during each month, 1939-1940.

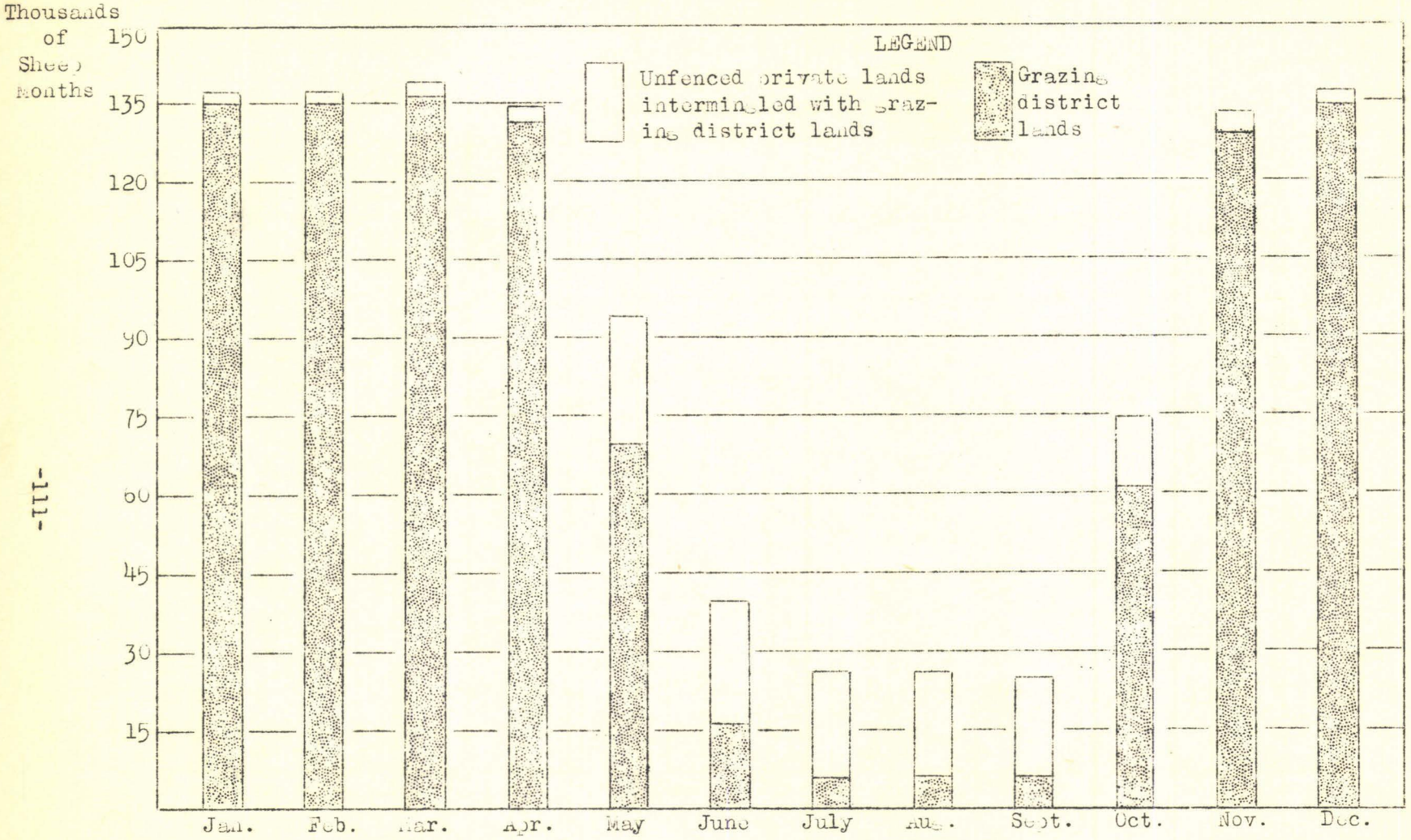

Figure 83.- Months of permitted use for sheep licensed to graze on the San Rafael Grazing District during each month, 1939-1940.

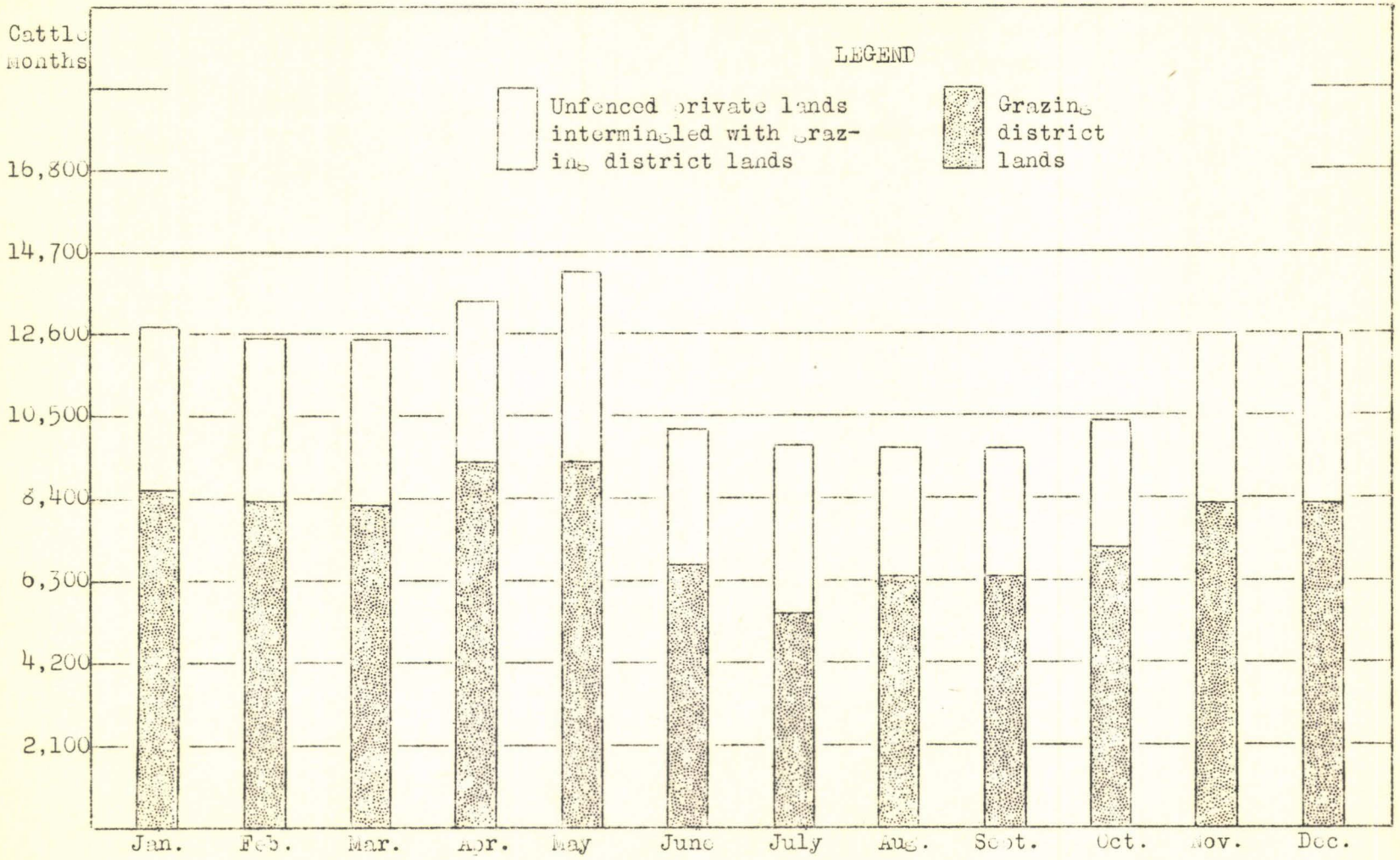

Figure 84.- Months of permitted use for cattle licensed to graze on the Duchesne Grazing District during each month, 1939-1940.

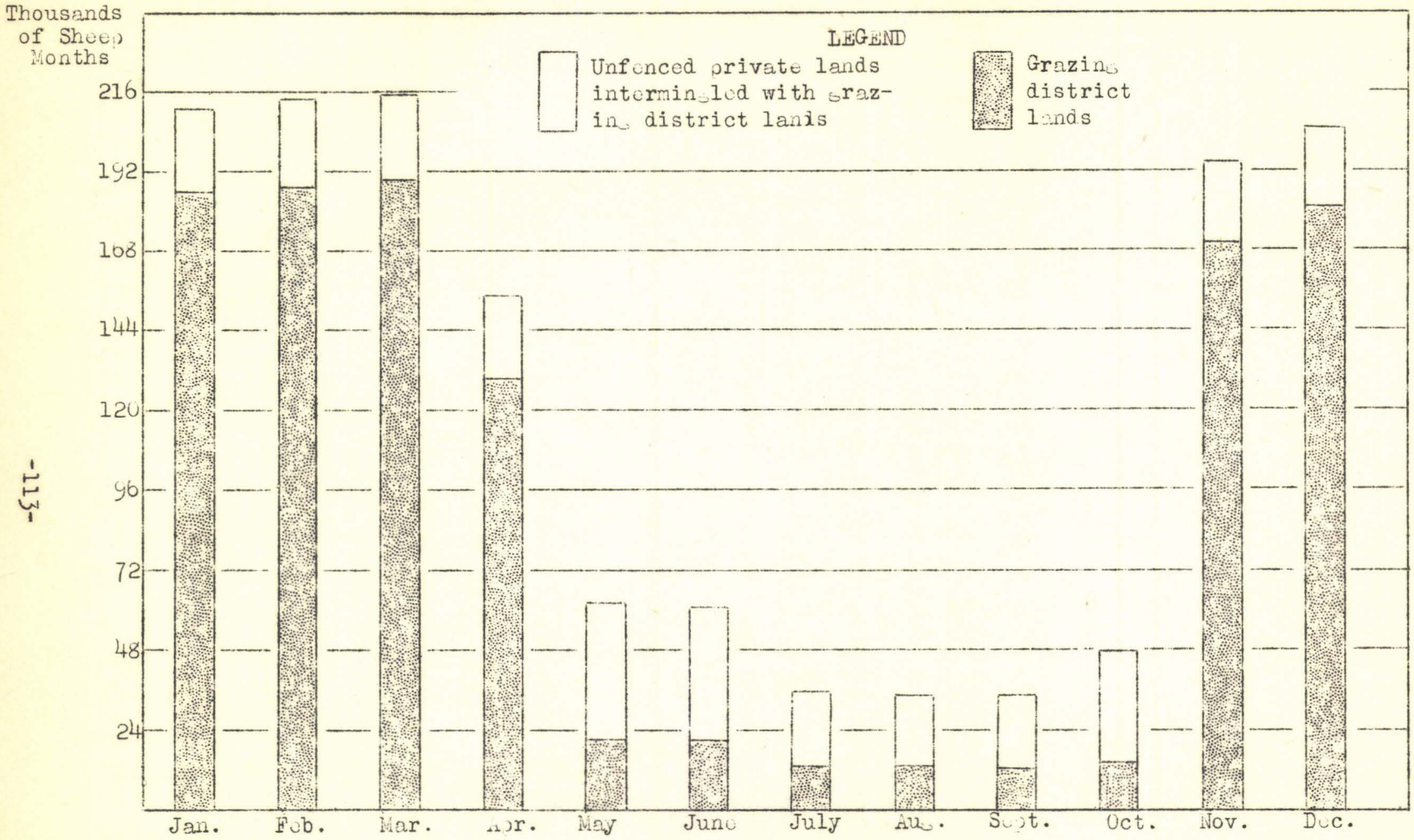

Figure 85.- Months of permitted use for sheep licensed to graze on the Duchesne Grazing District during each month, 1939-1940.

SOUTHWESTERN WYOMING[13/]

Figures 86 and 87 show the cattle and sheep months of permitted use on the public range of southwestern Wyoming. The cattle graph shows that the grazing districts and national forests furnish three-fourths of the summer range required by the range cattle population of this area. The spring grazing in May is secured largely from the grazing districts. From October 15 until May, most of the cattle are on the privately owned pastures and meadows and are fed hay during the winter months. This figure indicates the close relationship between the public ranges during the summer and the private lands in the winter for beef cattle production in this area.

Figure 87, the sheep graph for western Wyoming, shows the important role the public lands play in sheep production, in this area. About one-third of the summer grazing is on privately owned range. The private range is the higher land located near the forests and in the southwestern part of Lincoln County. The extensive use of private lands intermingled with the grazing district lands is due to the large acreage of checkerboard railroad lands. These lands are principally controlled by the Rock Springs Grazing Association lease and by a number of large livestock and land companies. The Rock Springs Grazing Association has been an effective method for the control of these private lands.

13/ This area includes the Teton and Bridger National Forests and the Sublette and Green River Grazing Districts. A small amount of use by Wyoming sheep and cattle on the Ashley and Caribou National Forests is also included.

Bridger National Forest

The Bridger Forest has a grazing season for cattle from approximately June 15 until October 15 and for sheep from July 1 to September 30. The season of use for these higher ranges is relatively short compared with the lower ranges that open up earlier in the year and can be used later in the fall. The higher ranges provide the more desirable summer range, especially for sheep which do not do well under the relatively high summer temperatures on the desert ranges. The use of the Bridger Forest by sheep is closely tied in with winter and spring and fall grazing on the Sublette and Green River Grazing Districts. Most of the cattle are wintered from 4 to 5 months on hay.

Teton National Forest

Figures 88 and 89 present the cattle and sheep use on the Teton Forest. This forest is relatively unimportant from the standpoint of livestock production in the region. There is a 5-month season for cattle from June to November, while the sheep season is short, from July 15 until the middle or last of September. The cattle and sheep that summer on this forest are maintained on harvested feed crops during the winter.

Green River Grazing District

Figure 92 shows the cattle use on the Green River Grazing District. There is a small amount of winter grazing but most of the cattle use is during the summer. Cattle use some of the range in summer that is grazed by sheep in the winter. This graph indicates that most of these cattle are fed during the winter months. Sheep use on the Green River District (figure 93) is principally during the spring and winter.

The summer sheep use on the grazing district is at the higher elevations such as in Lincoln and southwestern Sweetwater Counties. As stated before, the large amount of private land used with the grazing district land is the checkerboard railroad lands. There is little movement of sheep between the Sublette and Green River Districts, nor is there an appreciable interstate movement to or from these districts.

Sublette Grazing District

Cattle use on this district (figure 94) is largely in the spring with some summer use. Most of the cattle operations in this district have appreciable holdings of private land. The grazing district is used at the end of the winter feeding period and before the cattle go onto the higher ranges of the national forest. The summer use of the district is on the higher lands bordering the forests. The sheep use of the Sublette Grazing District is different from the Green River District. As shown in figure 95 there is no distinct winter use. This is because the majority of these sheep are fed hay during the winter. An appreciable use is made of the district in the late fall months before the range is covered with snow. The grazing on this district is associated with summer grazing on the Bridger Forest and private range lands.

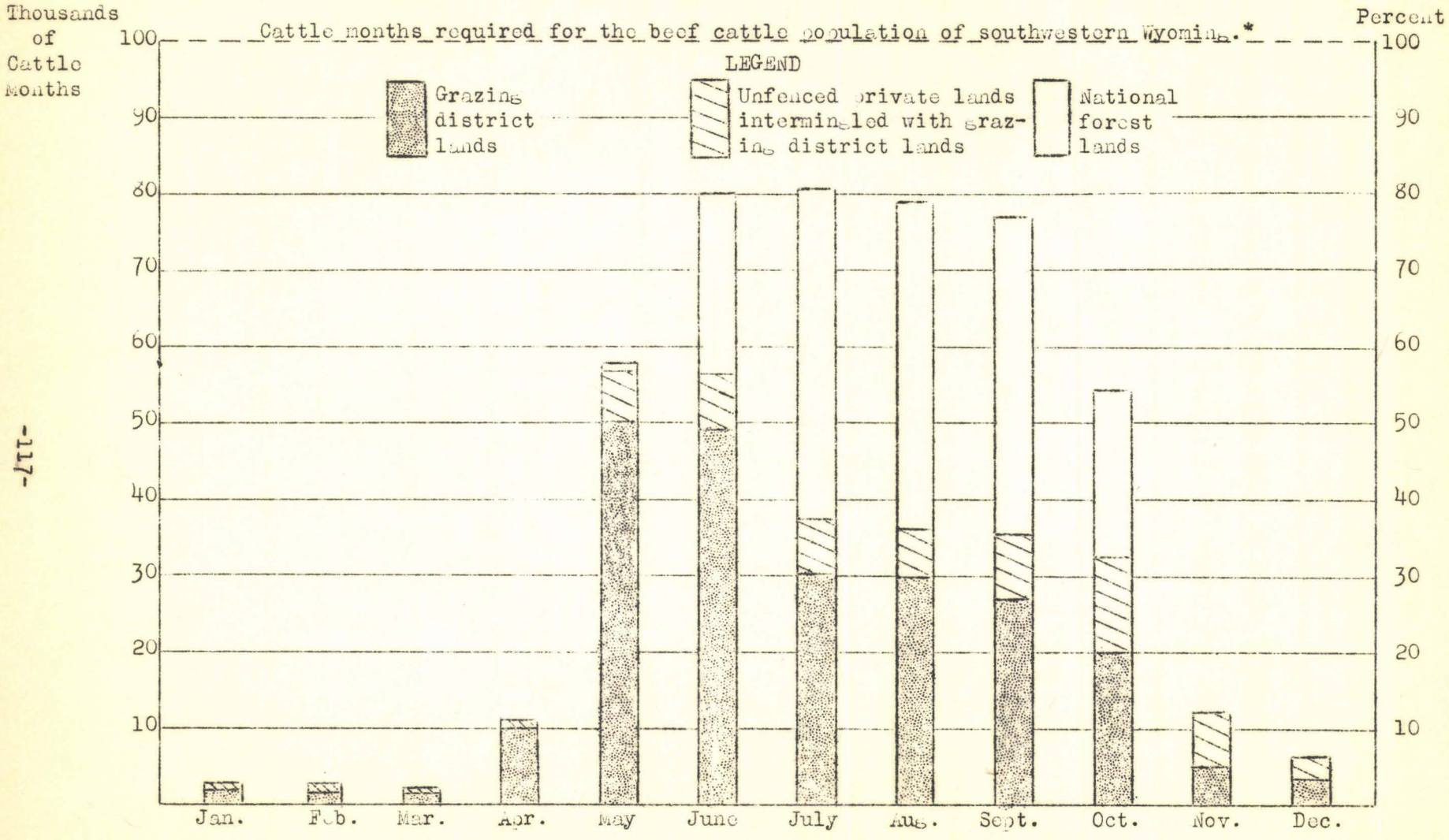

Figure 86.- Cattle months required by the beef cattle population of southwestern Wyoming* and the amounts furnished by the different kinds of land during each month, 1939.

*Includes Lincoln, Sublette, Sweetwater, Teton, and Uinta Counties.

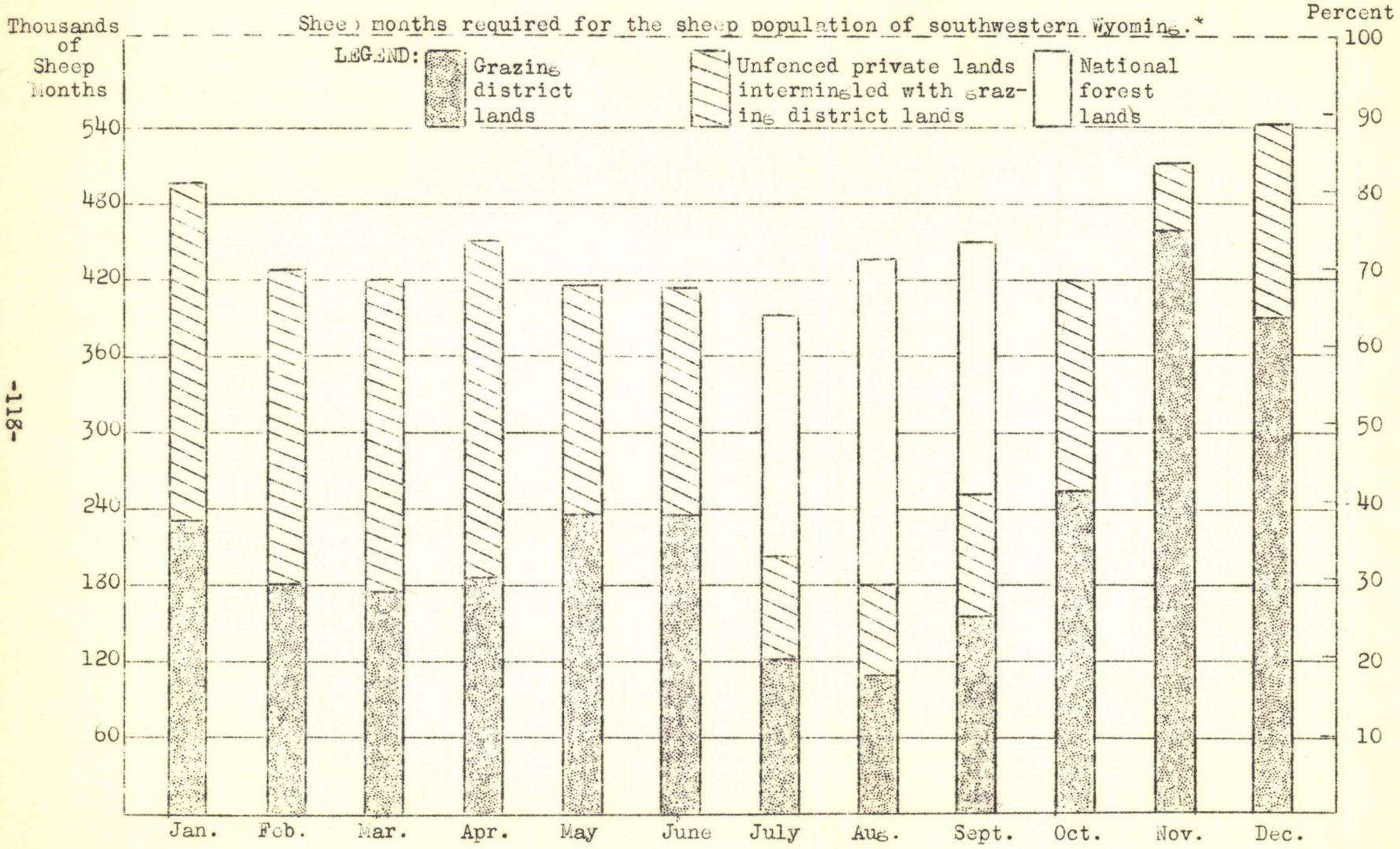

Figure 87.- Sheep months required by the sheep population of southwestern Wyoming, and the amounts furnished by the different kinds of land during each month, 1939.

* Includes Lincoln, Sublette, Sweetwater, Teton, and Uinta Counties.

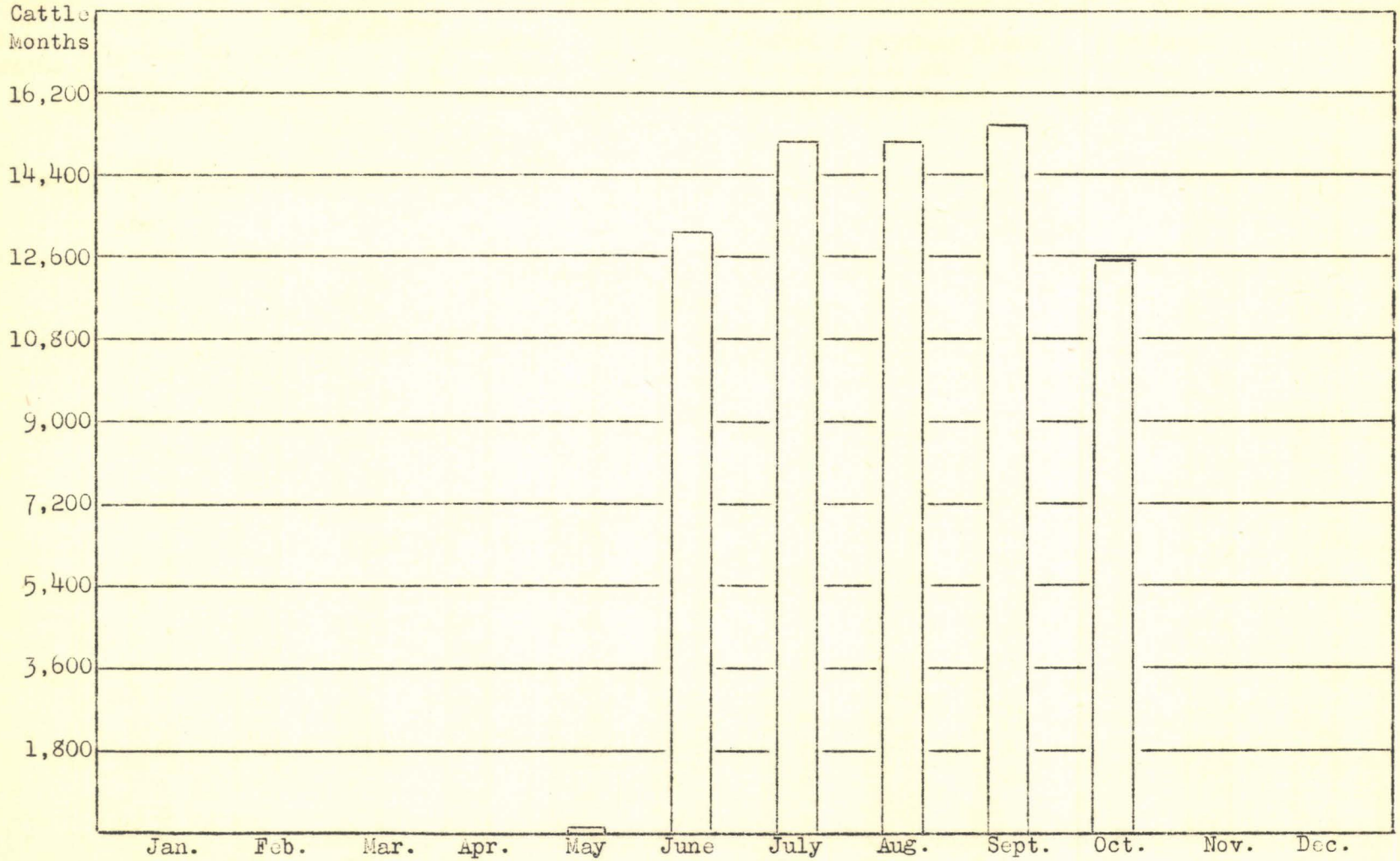

Figure 88.- Months of permitted use for cattle permitted to graze on the Teton National Forest during each month, 1939.

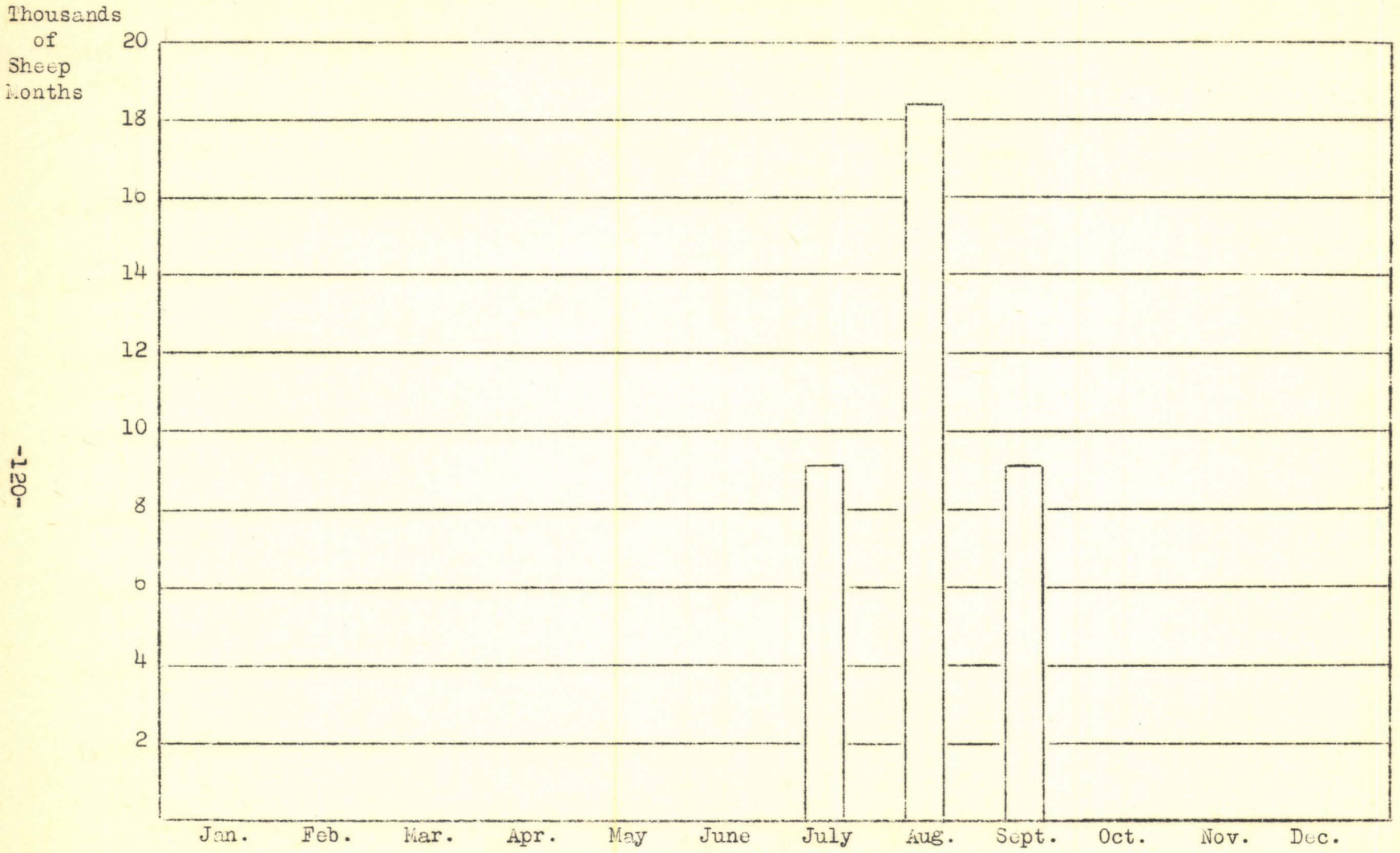

Figure 89.- Months of permitted use for sheep permitted to graze on the Teton National Forest during each month, 1939.

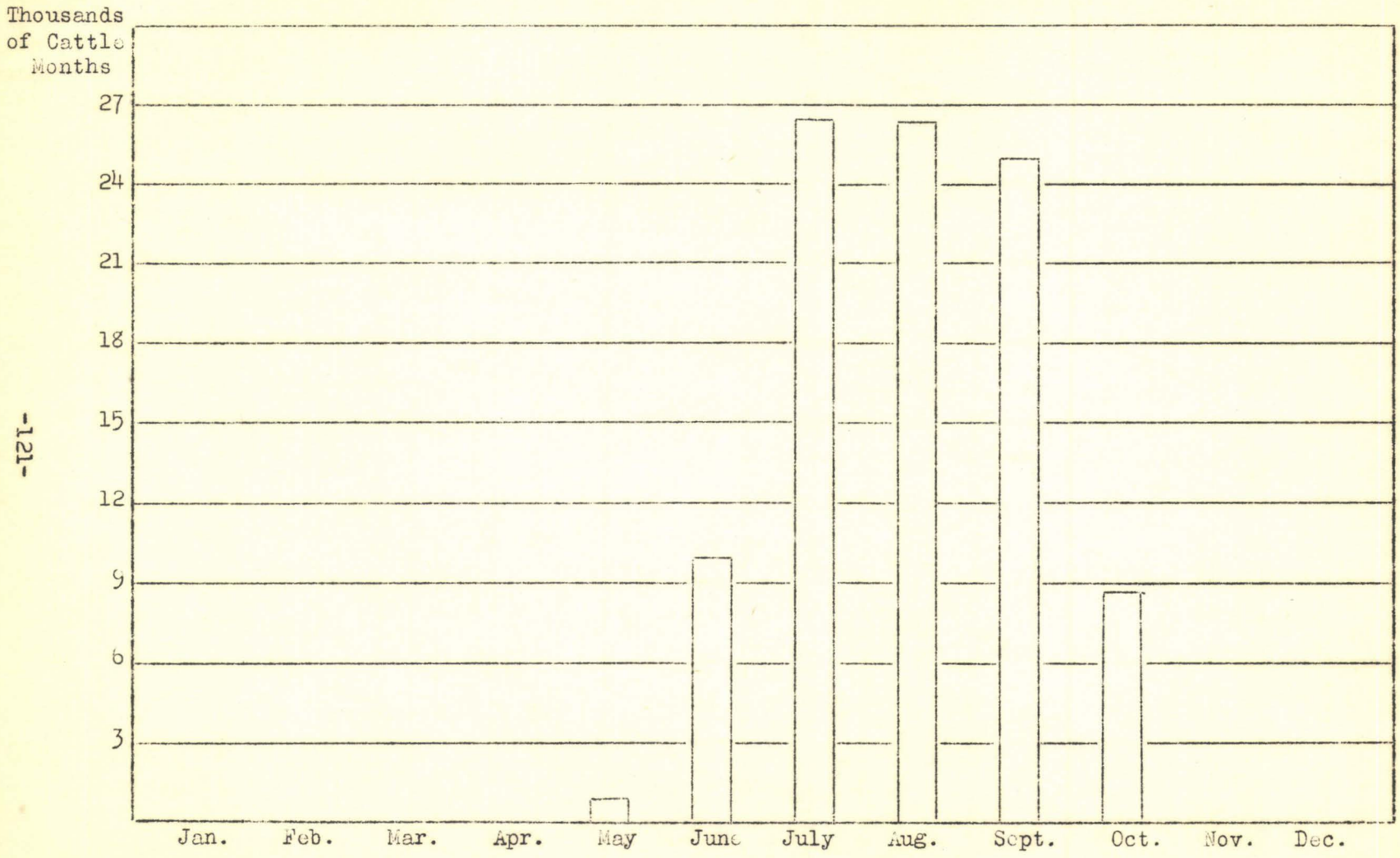

Figure 90.- Months of permitted use for cattle permitted to graze on the Bridger National Forest during each month, 1939.

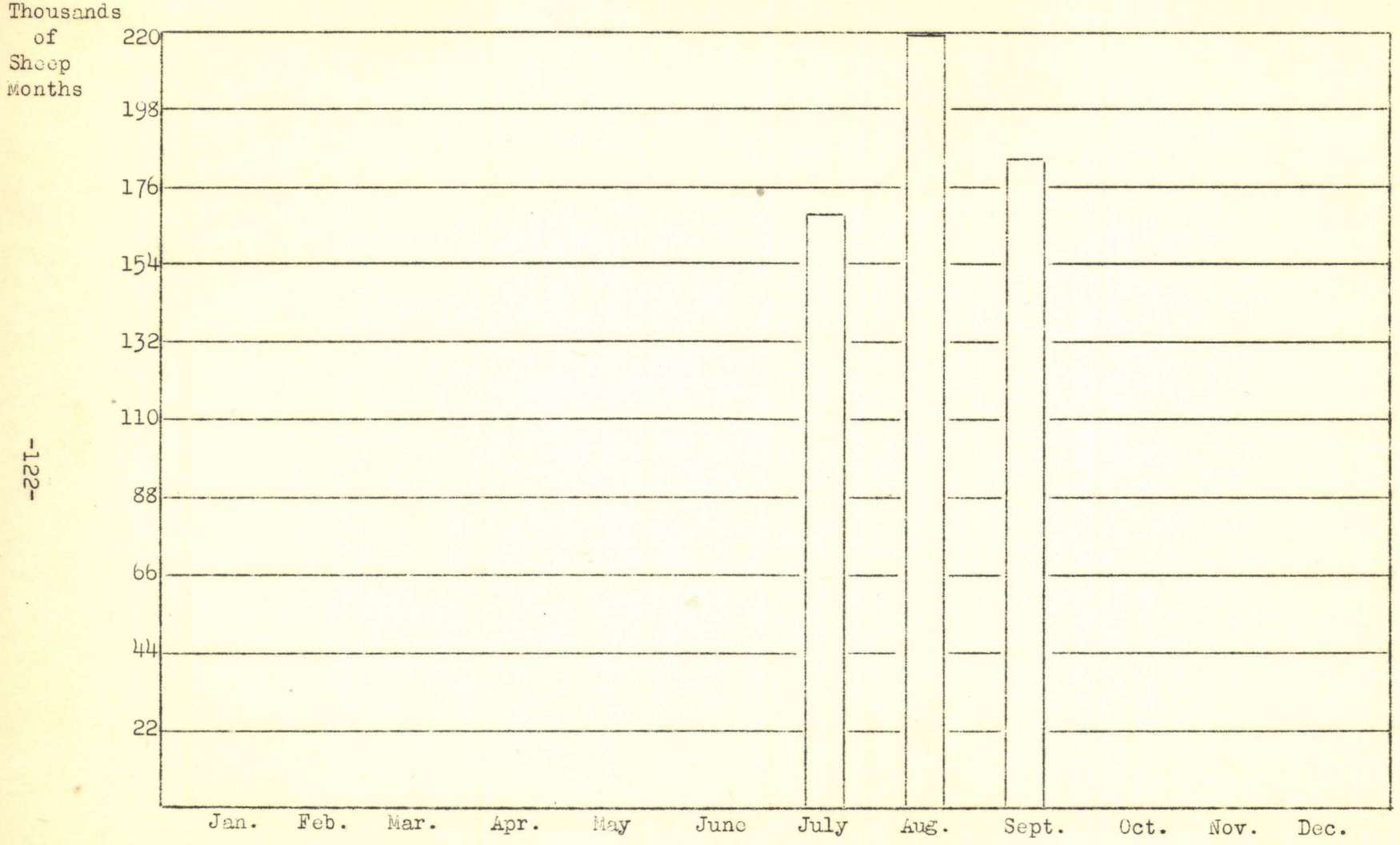

Figure 91.- Months of permitted use for sheep permitted to graze on the Bridger National Forest during each month, 1939.

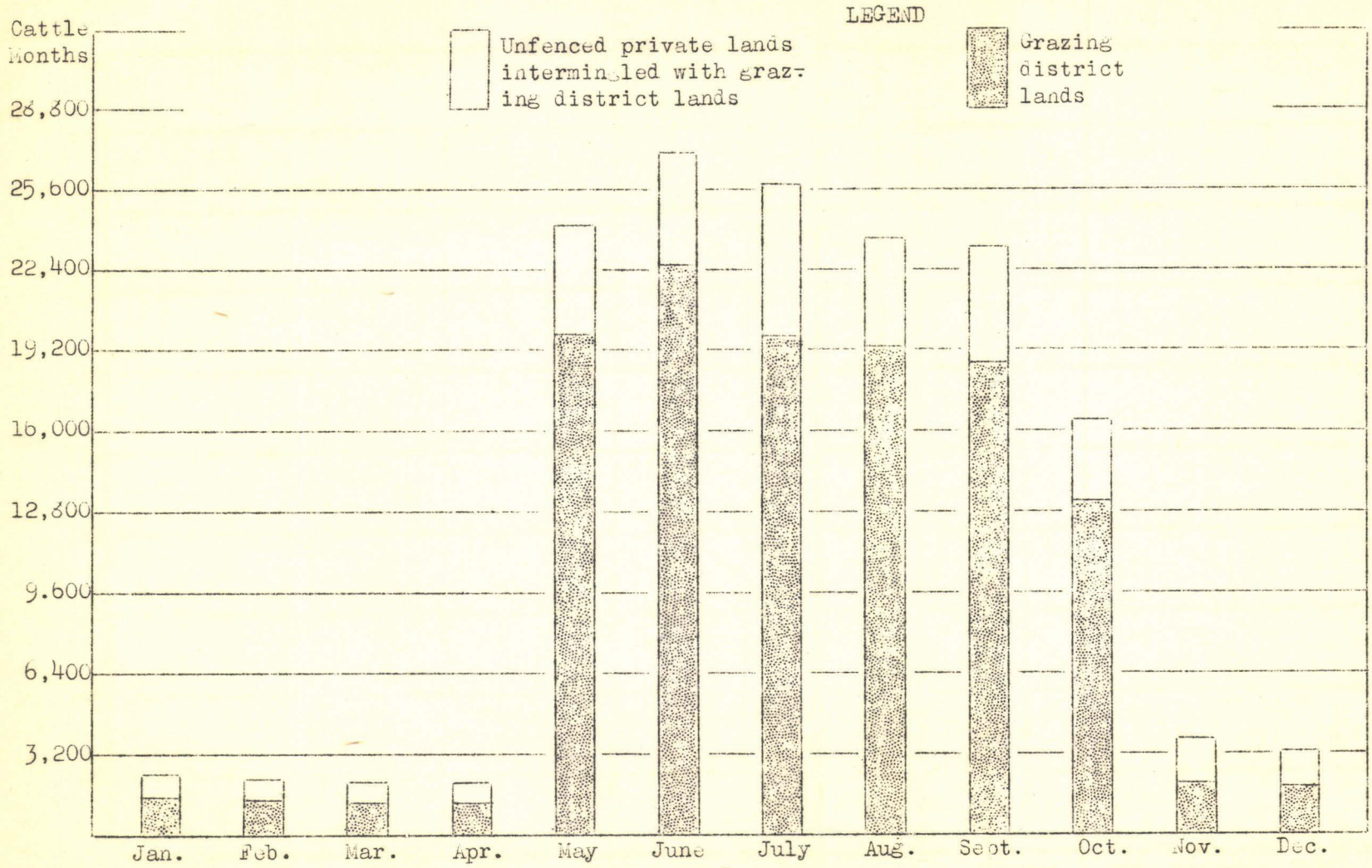

Figure 92.- Months of permitted use for cattle licensed to graze on the Green River Grazing District during each month, 1939-1940.

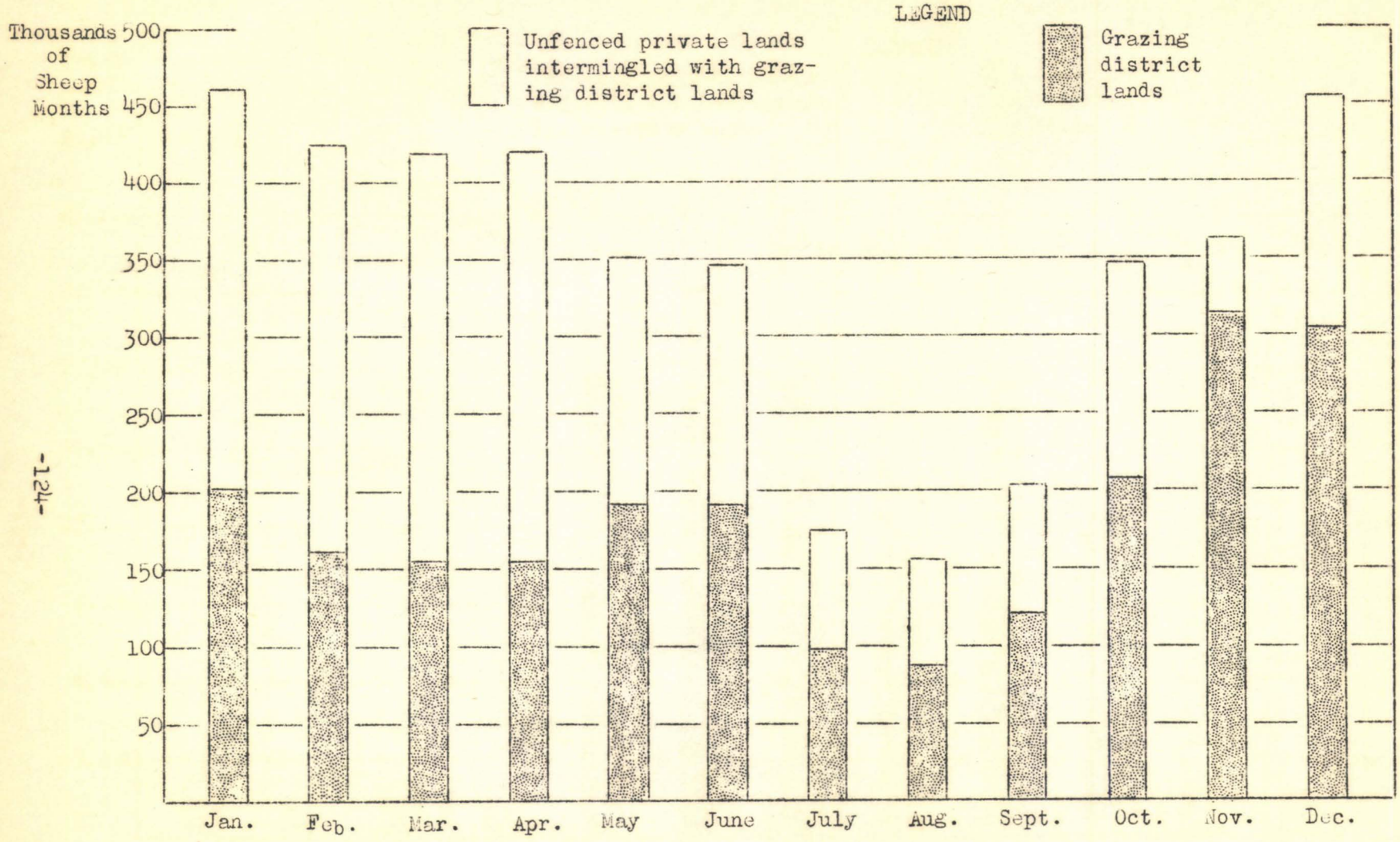

Figure 93.- Months of permitted use for sheep licensed to graze on the Green River Grazing District during each month, 1939-1940.

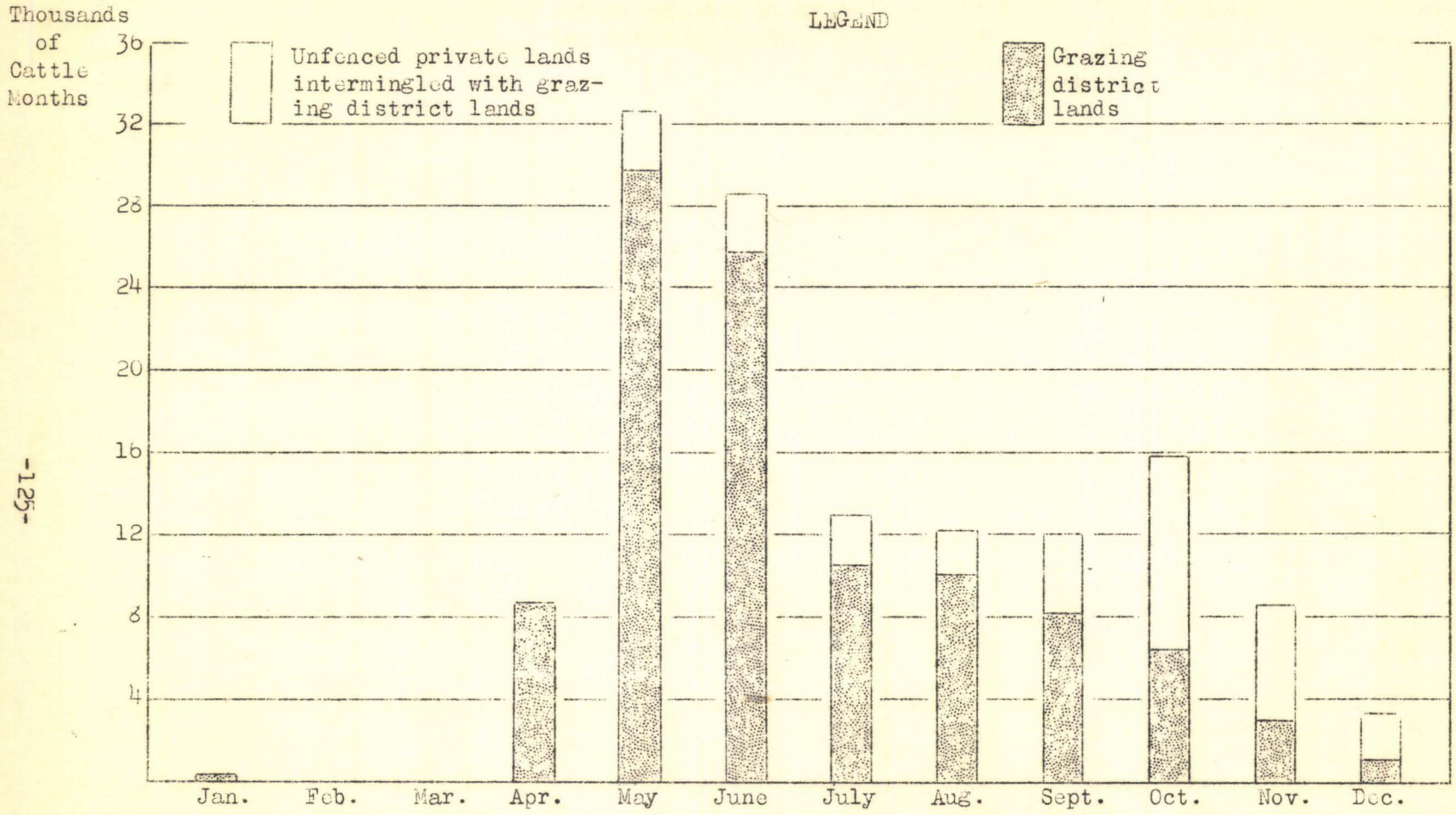

Figure 94.- Months of permitted use for cattle licensed to graze on the Sublette Grazing District during each month, 1939-1940.

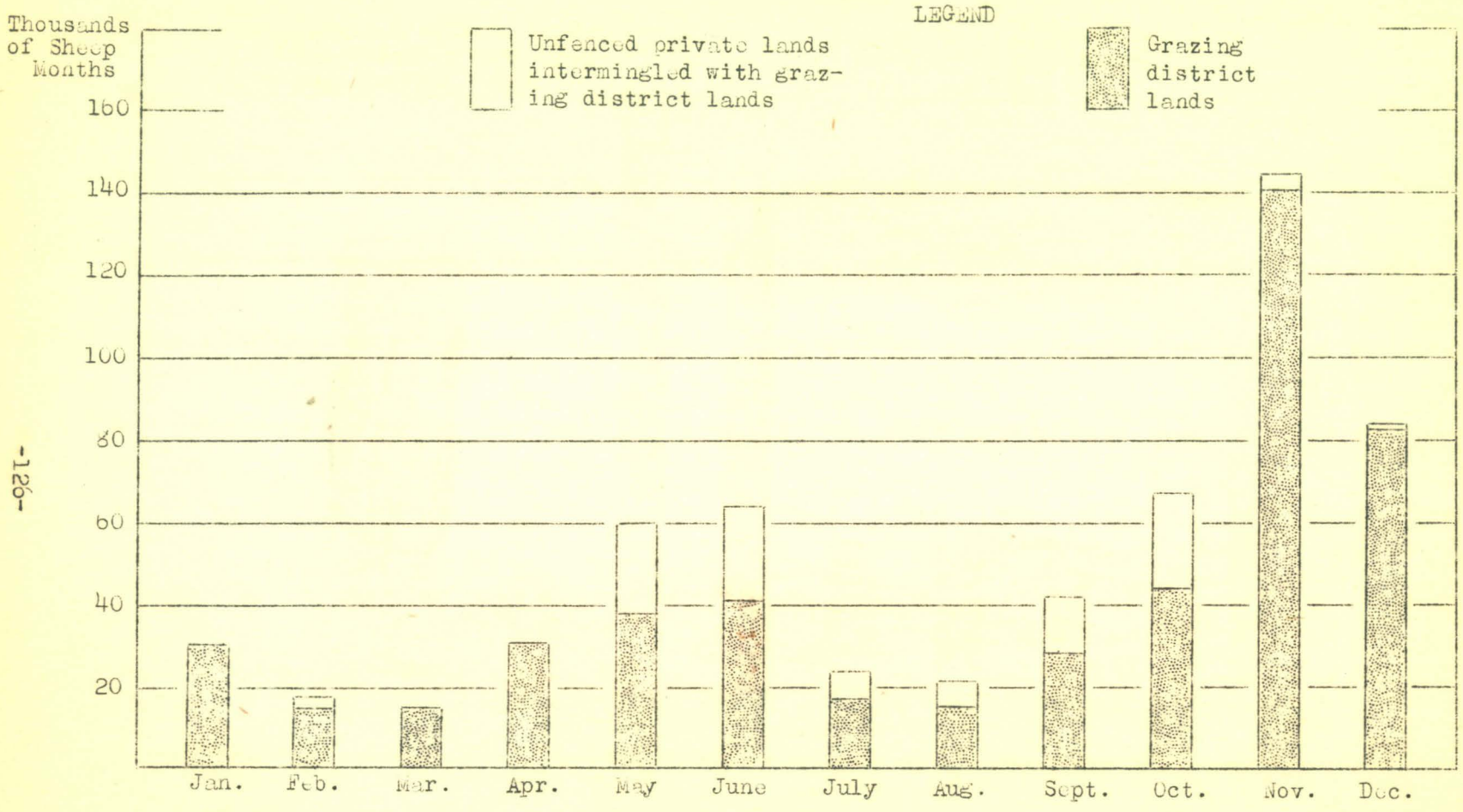

Figure 95.- Months of permitted use for sheep licensed to graze on the Sublette Grazing District during each month, 1939-1940.

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Roth, Arthur H.

A graphic summary of grazing on the public lands of the Internountain Region. Part III Seasonal use relationships of lands used in the production of range livestock.